

AS300 Upgrade and DAA Consolidation Guide

IMPAX 5.2 or 5.3 to IMPAX 6.5.3

Upgrading an IMPAX AS300 Cluster That Uses
Direct Attached Archives



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 Agfa HealthCare N.V.

Septestraat 27, 2640 Mortsel, Belgium

www.agfahealthcare.com

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(Topic number: 7696)

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Getting started

1

Understanding parallel migration and Direct Attached Archive (DAA) consolidation helps ensure faster and more successful migrations to IMPAX 6.5.3.

Valid IMPAX upgrade paths

(Topic number: 6607)

Sites can upgrade to IMPAX 6.5.3 from any of these versions of IMPAX (supported versions include any applicable SUs):

- IMPAX 5.2.5—hereafter referred to as IMPAX 5.2
- IMPAX 5.3.1 and 5.3.2—hereafter referred to as IMPAX 5.3
- IMPAX 6.2.1—hereafter referred to as IMPAX 6.2
- IMPAX 6.3.1—hereafter referred to as IMPAX 6.3
- IMPAX 6.4
- IMPAX 6.5, 6.5.1, and 6.5.2

For more detailed information, refer to the *IMPAX 5.x–6.x Service Update and Hot Fix Migration Paths* spreadsheet in the Additional documents section of the IMPAX Knowledge Base > Main Knowledge Base Page.

A site running IMPAX 4.5 can migrate its user data—passwords, IDs, and most preferences—to IMPAX 6.5.3. However, database data cannot be upgraded directly from IMPAX 4.5 to IMPAX 6.5.3. The IMPAX 4.5 database data and schema must first be upgraded to IMPAX 5.2, then to IMPAX 6.5.3. (This can be done during one upgrade, rather than in two separate upgrades.)



Important!

We recommend checking the migration log file after each leg of an upgrade before moving on to the next leg.

For AS300 (Windows) upgrades, also consider the following:

- Since all IMPAX 6.5.3 AS300 servers and Application Servers must be installed on Windows Server 2008 R2 SP1, all upgrades to IMPAX 6.5.3 require forklift upgrades to new or restaged hardware. All AS300 servers and Application Servers in a cluster must use the same operating system. For details on installing Windows Server 2008 R2 SP1, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.
- For IMPAX AS300 upgrades, if you are currently on SQL Server 2000 or later, and you want to continue using SQL Server, you must do a forklift upgrade onto new or restaged hardware installed with SQL Server 2008 R2 SP1. For details on installing SQL Server 2008 R2 SP1, refer to the *AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3* or the *AS300 Preparing to Upgrade Guide—IMPAX 6.2 or Later to IMPAX 6.5.3*.
- To migrate an IMPAX AS300 cluster from SQL Server to Oracle, contact Agfa Professional Services for assistance. This migration process is not documented in this guide.

For Oracle upgrades, the following considerations apply:

- To migrate an IMPAX cluster from Oracle for Solaris to Oracle on Windows, contact Agfa Professional Services for assistance. This migration process is not documented in this guide.
- If performing a forklift upgrade, ensure that you install the same Oracle edition as the existing production system or else the database migration will fail. For example, if the database on the production system is Oracle Standard Edition, install Oracle Standard Edition when staging the new system. Or, if the database on the production system is Oracle Enterprise Edition, install Oracle Enterprise Edition when staging the new system.

About this guide

(Topic number: 134666)



Important!

Before proceeding with the upgrade of the AS300 server components, ensure that you have completed the tasks outlined in the *AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3*.

This manual is intended for service and administrative personnel who are charged with upgrading an IMPAX cluster meeting the following criteria to IMPAX 6.5.3:

Criteria	Cluster currently using
IMPAX version	IMPAX 5.2 or 5.3

Criteria	Cluster currently using
	(For details on supported SUs, refer to the <i>IMPAX 5.x–6.x Service Update and Hot Fix Migration Paths</i> spreadsheet in the “Additional documents” section of the IMPAX Knowledge Base > Main Knowledge Base Page.)
Operating system	AS300 (Windows-based Database Server)
Database	SQL Server
Archive type	Any direct attached archive, such as CD-R, DVD-R, MOD, or DLT

If the cluster meets the first three criteria but is using only HSM or PACS Store and Remember archiving—no attached archives—then upgrade that cluster according to the procedures documented in the *AS300 Upgrade and Migration Guide—IMPAX 5.2 or 5.3 to IMPAX 6.5.3*.

If upgrading from IMPAX 6.2.1 or later or if upgrading an IMPAX AS3000 (Solaris database) cluster, refer to the guides specifically related to those versions and configurations.

Supported Windows and database versions

(Topic number: 134867)

Be aware of the following limitations related to supported Windows and database versions on various IMPAX servers.

- Since all IMPAX 6.5.3 AS300 servers and Application Servers must be installed on Windows Server 2008 R2 SP1, all upgrades to IMPAX 6.5.3 require forklift upgrades to new or restaged hardware. All AS300 servers and Application Servers in a cluster must use the same operating system. For details on installing Windows Server 2008 R2 SP1, refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.
- For IMPAX AS300 upgrades, if you are currently on SQL Server 2000 or later, and you want to continue using SQL Server, you must do a forklift upgrade onto new or restaged hardware installed with SQL Server 2008 R2 SP1. For details on installing SQL Server 2008 R2 SP1, refer to the *AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3* or the *AS300 Preparing to Upgrade Guide—IMPAX 6.2 or Later to IMPAX 6.5.3*.
- To migrate an IMPAX AS300 cluster from SQL Server to Oracle, contact Agfa Professional Services for assistance. This migration process is not documented in this guide.

New IMPAX concepts and functionality

(Topic number: 6684)

IMPAX 6.5.3 introduces:

- Support for all-in-one, single-server, and standalone configurations in a 64-bit environment, while running in a 32-bit emulation mode. (Because of technical constraints encountered when running on 32-bit operating systems, these configurations were not supported in IMPAX 6.5.2.)

- Platform updates include support for Windows Server 2008 R2 SP1, SQL Server 2008 R2 SP1 (upgrades only), and the retirement of several database and operating system platforms including Windows Server 2003 (32-bit and 64-bit), Windows Server 2008 (32-bit), SQL Server 2005, SQL Server 2008 (32-bit), and Oracle 11g for Windows (32-bit). As well, the standalone configuration on Windows XP is no longer supported.

For a more detailed list of new IMPAX 6.5.3 features and concepts, refer to:

- “New in IMPAX Client” (topic number 8102) in the *IMPAX 6.5.3 Client Knowledge Base: Extended*
- “New in IMPAX Server” (topic number 60699) in the *IMPAX 6.5.3 Server Knowledge Base*
- “New in IMPAX Application Server” (topic number 11630) in the *IMPAX 6.5.3 Application Server Knowledge Base*

IMPAX 6.5.2 introduced:

- Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later) to synchronize study status notifications and claim and assign messages between the two clusters as if they were one
- Profile Replication, which allows replication of user and resource permissions and preferences across multiple IMPAX clusters
- Support for adding a rationalized RBAC (role-based access control) model to the IMPAX ADAM database and removing the non-rationalized model at a later date
- Support for Solaris zones partitioning technology, which virtualizes operating system services and provides an isolated and secure environment for running applications (new installations only)

IMPAX 6.5.1 included:

- Improved speech synchronization in IMPAX Reporting
- Instant Messaging to easily connect with colleagues
- Validation of new speechmikes with IMPAX 6.5.1
- The ability to control local configuration of stations in various locations (such as home or work)
- The introduction of the Agfa Web Service Portal (Service Portal), a web-based tool used to support, maintain, and monitor the IMPAX system

IMPAX 6.5 included:

- Enhanced snapshot functionality
- Enhanced embedded IMPAX Reporting
- An updated Spine Annotation tool

- Additional support for free-text study and voice comments
- Enhanced scheduled worklist functionality
- Enhanced breast imaging

It also included IMPAX Results Viewer, a browser-based IMPAX client designed to enable efficient distribution of medical images and reports for referring physicians and other healthcare professionals.

Platform updates included support for Windows 7, Windows Server 2008, SQL Server 2008, and Solaris Live Upgrade. A hierarchical cache structure was implemented for image and web caches, permitting larger cache volumes. A cache migration tool was also included in the standard IMPAX install packages.

IMPAX 6.4 included:

- Significantly improved CT and MR study navigation
- IMPAX Reporting enhancements
- Improved study comments and support for voice comments
- Enhanced mammography features
- New Client administration features

Platform updates included support for Windows Vista (Client only), SQL Server 2005, and Oracle for Windows. Additional Server migration tools were also provided.

IMPAX 6.3 included multi-cluster functionality, which provides a patient-centric view across hospitals within several sites. Additional new features, such as streamlined Application Server updates, IMPAX Reporting dictation, and configurable simple Search, were provided in the IMPAX 6.3.1 release.

IMPAX 6.2 built on the IMPAX 6.0 foundation to deliver new mammography and user administration features, along with some Image area enhancements.

IMPAX 6.0 and later were introduced as next-generation PACS systems. Compared with previous versions of IMPAX (5.3 and earlier), the IMPAX Client included:

- A new user interface and architecture
- Installation through a browser download
- Tighter integration with the IMPAX RIS software
- RIS information in a new Text area
- Better integration with the TalkStation and IMPAX Reporting software

IMPAX 6.0 also introduced new server components:

- Application Server—An intermediary that separates Clients from the Database Server and other IMPAX Server components
- Curator—Converts study images to a compressed wavelet format
- Connectivity Manager—Replaces PACS Broker or RIS Gateway in the cluster

Understanding parallel migration

(Topic number: 123301)

With a serial migration, upgrades from one version of IMPAX to another have two distinct phases:

1. A preparing to upgrade period, which can last weeks, during which initial installations are performed, some data is migrated in advance, and users are trained on the new system.
2. An upgrade period, typically performed over a weekend, during which the IMPAX software and database are upgraded from the previous to the new version.

After the upgrade period, users switch over to using the new version exclusively.

With a parallel migration, by contrast, both the previous and the upgraded versions of IMPAX run simultaneously for a period of time, which could last weeks or months. Cluster linking is deployed to keep the two clusters in synchronicity with each other. Parallel migrations require that a new Database Server be deployed (rather than upgrading the existing one). Downtime is greatly reduced, and users transition more gradually from the previous system to the new version.

When using direct attached archives, it can take a long time to move the archive data from that system to a new HSM archive. Therefore, it becomes necessary to use a parallel migration approach. (Direct attached archives are not supported in IMPAX 6.5.3.)

DAA consolidation

(Topic number: 123304)

A Direct Attached Archive (DAA) is a non-networked long-term storage device directly connected to a server. IMPAX 6.4 and later versions do not support DAA. Therefore, all legacy IMPAX systems with DAA that upgrade to IMPAX 6.5.3 must migrate the obsolete DAA to a network-based archive; that is, to DICOM PACS Store and Remember or to HSM archiving.

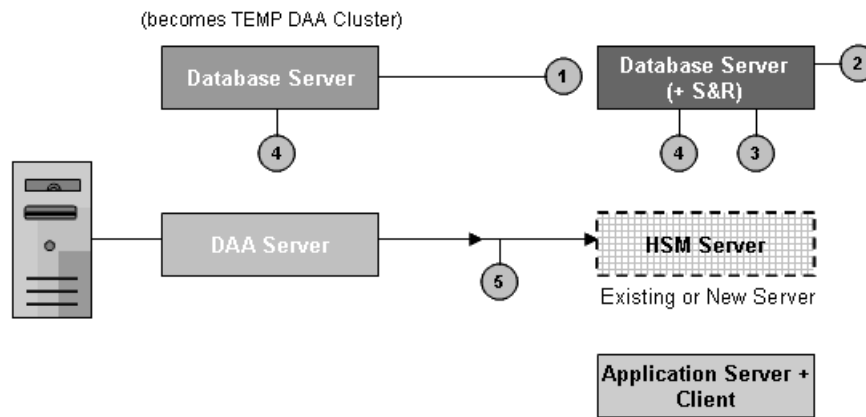
Different methods exist of transitioning the legacy IMPAX cluster to the new archiving method. Tools are available to aid in the effort.

Parallel migration and DAA consolidation overview

(Topic number: 123508)

The following diagram depicts a parallel migration with DAA consolidation scenario that does not require a traveling server. Using this method, the downtime of the production system is reduced to the time required to do a cold backup. The two IMPAX systems in this scenario can function as parallel clinical systems, allowing users to slowly transition to IMPAX 6.5.3.

Previous-version IMPAX production system IMPAX 6.5.3 parallel system



After the new IMPAX 6.5.3 cluster is installed, the following high-level tasks are performed:

1. Restore a cold backup from the previous-version production system to the new IMPAX 6.5.3 system.
2. Upgrade Oracle and the database schema on the IMPAX 6.5.3 system.
3. Convert the DAA entries to PACS Store and Remember on the IMPAX 6.5.3 cluster and confirm that DAA studies are accessible.
4. Perform de-referencing tasks (remove reference to DAA locations) on the IMPAX 6.5.3 and previous IMPAX clusters.
5. Attach an HSM server to the IMPAX 6.5.3 cluster and use Volume Migration Tool to migrate archive data from DAA to HSM.

This is the upgrade method documented for IMPAX AS300 4.5, 5.2, or 5.3 clusters that use DAA and for IMPAX AS3000 5.2 or 5.3 clusters that use DAA.

IMPAX 6.2 or later DAA consolidation with existing hardware

(Topic number: 125319)

The following diagram depicts an IMPAX 6.2 or later DAA consolidation scenario. With this method, additional hardware is required to function as the Database Server of a temporary DAA cluster. The estimated downtime is the time required for the cold backup and the upgrade of the existing production system to IMPAX 6.5.3.



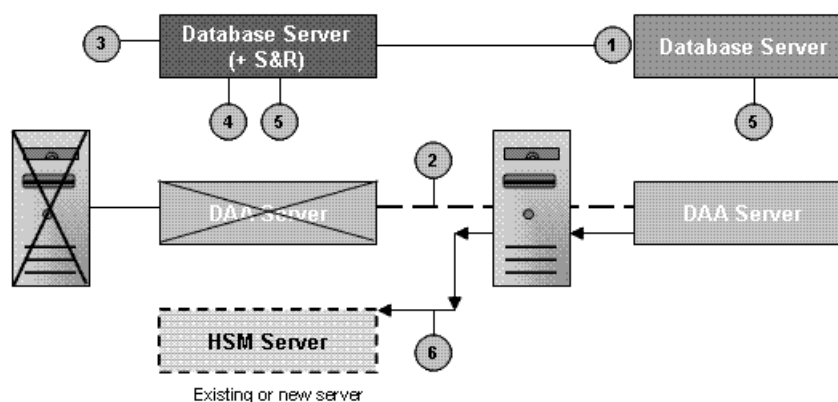
Note:

The IMPAX 6.5.3 AS300 server platform is Windows Server 2008 R2 SP1. Existing servers can be restaged with this operating system, assuming that the hardware is 64-bit compatible. All Database Server upgrades are forklift upgrades, involving fresh installations onto restaged or new hardware.

IMPAX 6.2 or later production system

Temporary DAA cluster

(upgrades to IMPAX 6.5.3)



After the temporary DAA cluster is installed with IMPAX 6.2 or later software (the IMPAX version currently being used in production), the following high-level tasks are performed:

1. Restore a cold backup from IMPAX 6.2 or later production system to the temporary DAA cluster.
2. Detach the DAA server from the IMPAX 6.2 or later production system and make it part of the temporary DAA cluster.
3. Upgrade the database, schema, and IMPAX software on the IMPAX 6.2 or later production system.
(Upgrades of AS300 servers to IMPAX 6.5.3 are forklift upgrades, involving fresh installations onto restaged or new hardware.)
4. Convert DAA entries to PACS Store and Remember on the upgraded IMPAX 6.5.3 production cluster.
5. Perform de-referencing tasks (removing DAA references) on both the IMPAX 6.5.3 and the temporary DAA clusters.
6. Attach an HSM server to the IMPAX 6.5.3 cluster and use Volume Migration Tool to migrate archive data from DAA to HSM.

This is the upgrade method documented for IMPAX AS300 and IMPAX AS3000 6.2 or later clusters using DAA.

For more details, refer to the *AS300 Upgrade and DAA Consolidation Guide—IMPAX 6.2 or 6.3 to IMPAX 6.5.3* or the *AS3000 Upgrade and DAA Consolidation Guide—IMPAX 6.2 or 6.3 to IMPAX 6.5.3*.

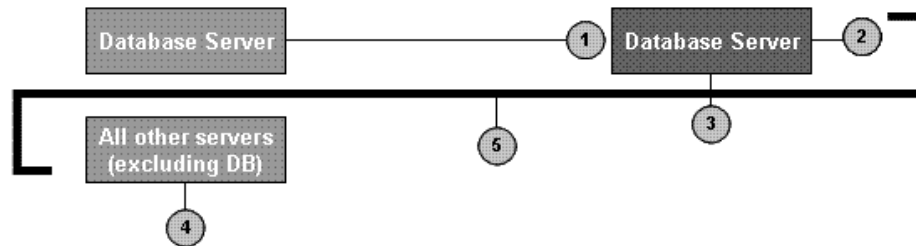
Backup and restore migration with new hardware

(Topic number: 125325)

The following diagram depicts a backup and restore migration in which new hardware is deployed instead of the existing servers being upgraded. This scenario is a non-parallel migration. If the site

is refreshing the entire production hardware, a traveling server may not be required. If using a traveling server, the estimated downtime is the time to transition to the traveling server and back to the migrated IMPAX 6.5.3 system.

IMPAX production system running earlier version **IMPAX 6.5.3 with new hardware for Database Server**



After the new IMPAX 6.5.3 cluster is installed, the following high-level tasks are performed:

1. Restore a cold backup from the existing IMPAX production system to the new IMPAX 6.5.3 system.
2. Upgrade Oracle and the database schema on the IMPAX 6.5.3 system.
3. Perform de-referencing tasks on the IMPAX 6.5.3 system as required.
4. Upgrade any servers (such as Network Gateways) that are to be reused to IMPAX 6.5.3.
5. Transition to the new migrated IMPAX 6.5.3 system (on the new hardware).

This method is not the one documented in this guide, though the individual tasks are similar to those done for the documented method.

Purpose of the Parallel and Volume Migration Tools

(Topic number: 123298)

With any IMPAX upgrade, you must use some of the tools and scripts included with the IMPAX 6.5.3 Migration Toolbox to extract relevant database information and upgrade the database schema. The IMPAX migration tools are in a dedicated Migration CD ISO.

When having to convert DAA entries—no longer supported in IMPAX 6.5.3—to PACS Store and Remember and HSM archiving (which is supported), two additional tools are required:

1. Parallel Migration Tool Set (PMTS), which de-references and re-references all of the cache and archive locations, and update all relevant database tables.
2. Volume Migration Tool (VMT), which performs the archive migration from the direct attached archive to HSM.

These tools are available from Agfa. They are **not** distributed with the IMPAX software.

Communicating upgrade plans

(Topic number: 9924)

Upgrading a site to IMPAX 6.5.3 from IMPAX 5.3 or earlier is a big undertaking. Ensure that the site personnel understand the major architectural differences between IMPAX 6.5.3 and IMPAX 5.3 and earlier. Hold a kick-off meeting for the key stakeholders in the upgrade to explain this and to identify:

- Site requirements
- Preparations required for success
- Expectations and responsibilities
- Upgrade project milestones

Document the decisions made at the kick-off meeting and deliver these to the site's primary project sponsor.

Next, develop a communication plan with the PACS Administrator to ensure that project schedules, expected changes, and other important information is effectively conveyed to affected personnel at the site. Also inform the Agfa GSN group about any expected down times.

Setting up the IMPAX 6.5.3 cluster

2

To begin the upgrade process, install the new IMPAX 6.5.3 cluster that will later run in parallel with the existing IMPAX cluster.

1. Prerequisite software installations

(Topic number: 59235)



Note:

For each package, ensure that the most current Service Update (SU) packages available at the time of upgrade are also installed.

Before proceeding with the migration to IMPAX 6.5.3, migrate or install the following software.

- If currently running PACS Broker 1.5.3, 1.5.4 or 1.5.5, you must migrate to Connectivity Manager 2.2.1 or later under the following circumstances:
 - Multi-site installations (for report queries from multiple sources)
 - VPN sites
 - EPR integrations with HL7 backend messaging
 - IMPAX RIS integrations
 - IMPAX RIS CD burning
 - Cardiology integrations
- If you require the following new IMPAX and Connectivity Manager functionality, you must also migrate to Connectivity Manager 2.2.1 or later:

- Report viewing in the IMPAX Client Text area
- IHE workflows
- MPPS communication from modalities
- Audit messaging
- Language support for Latin 4 character sets

Full instructions on migrating your Broker data to Connectivity Manager are provided in the appropriate version of the *Connectivity Manager Migration Guide*.



Note:

To continue to use PACS Broker 1.5.3, 1.5.4, or 1.5.5—and if the preceding circumstances do not apply—install the PACS Broker DICOM Interface SU2.

You can also install or upgrade the versions of the following products before upgrading to IMPAX 6.5.3. These components are optional and may not be used by all sites.

- If intending to use the IMPAX Reporting integration with the IMPAX Client, IMPAX RIS must be upgraded to version 5.7 or later. For upgrade instructions, refer to the *IMPAX RIS InstallShield Technical Manual*.
- TalkStation must be upgraded to TalkStation 4.0 SU4 or later. For instructions on upgrading TalkStation, refer to the appropriate TalkStation Upgrade Guides.
- Audit Manager. For installation instructions, refer to the *Audit Manager 1.2 Installation, Upgrade, and Configuration Guide*.

2. Obtaining Server license keys

(Topic number: 7637)

IMPAX uses software license keys that are unique to the station on which the software is installed. One license key is required for the Network Gateway and a separate license key must be obtained for the Archive Server (even if using PACS Store and Remember archiving).

Obtaining Server licenses for Windows stations

(Topic number: 10699)

To obtain new license keys, if this is required, email licensekey@agfa.com. To generate the license keys, Agfa must know the Ethernet MAC (Media Access Control) address of the server.

To obtain Server licenses for Windows stations

1. For each Windows server, open a command prompt and type **ipconfig /all**.

The MAC address of all Ethernet cards installed on the station are listed. You can use any of these to generate the license from.

2. Copy one of the returned MAC addresses to a secure place.

Ensure that you copy down the address exactly as it appears, including leading zeroes.

The MAC addresses contain only the alphanumeric characters 0-9 and A-F.

3. To obtain a license key for the server, send the MAC address information to licensekey@agfa.com, along with the type of component being installed on that server.

3. Staging new servers

(Topic number: 125282)

Stage the new Database Server, Curator, and Application Server with the IMPAX 6.5.3 software. To do so, follow the procedures in the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*, *IMPAX 6.5.3 Curator and CD Export Server Installation Guide*, and *IMPAX 6.5.3 Application Server Installation, Upgrade, and Configuration Guide*. While doing so, keep the following in mind:

- Stage the new Database Server with a different host name than the existing Database Server. Otherwise the two will not be able to run in parallel.
- You can install new Network Gateway and Archive Server stations or install these components on the new Database Server initially, then optionally move the old stations over to the cluster later on (where applicable).
- The Installation Guides describe the use of the Oracle database, but for upgrades, you must stay with SQL Server. Therefore, the instructions on how to install SQL Server 2008 R2 (refer to page 20) and how to install the IMPAX Database Server under SQL (refer to page 24) are included in this guide.
- Install or upgrade Client stations as it makes senses. For instructions, refer to the *IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide*.

1. Installing SQL Server 2008 R2

(Topic number: 141825)



Note:

SQL Server 2008 R2 is not distributed with IMPAX but is available from the Agfa Parts Center. Before beginning the installation, make note of the sa password to use, as you will be prompted to supply it.

We recommend that you install the SQL Server database on a drive other than C:; for example, the E: drive. For more details, see “Recommended disk partitions” (topic number 7056) in the *IMPAX 6.5.3 AS300 Installation and Configuration Guide*.

Oracle for Windows is the recommended database for new AS300 installations. However, if SQL Server 2005 or 2008 was previously used, you must install a new IMPAX Database Server with SQL Server 2008 R2 SP1 as part of the upgrade to IMPAX 6.5.3, and select the SQL Server Extension package when installing the Database Server (refer to page 24).

To install SQL Server 2008 R2

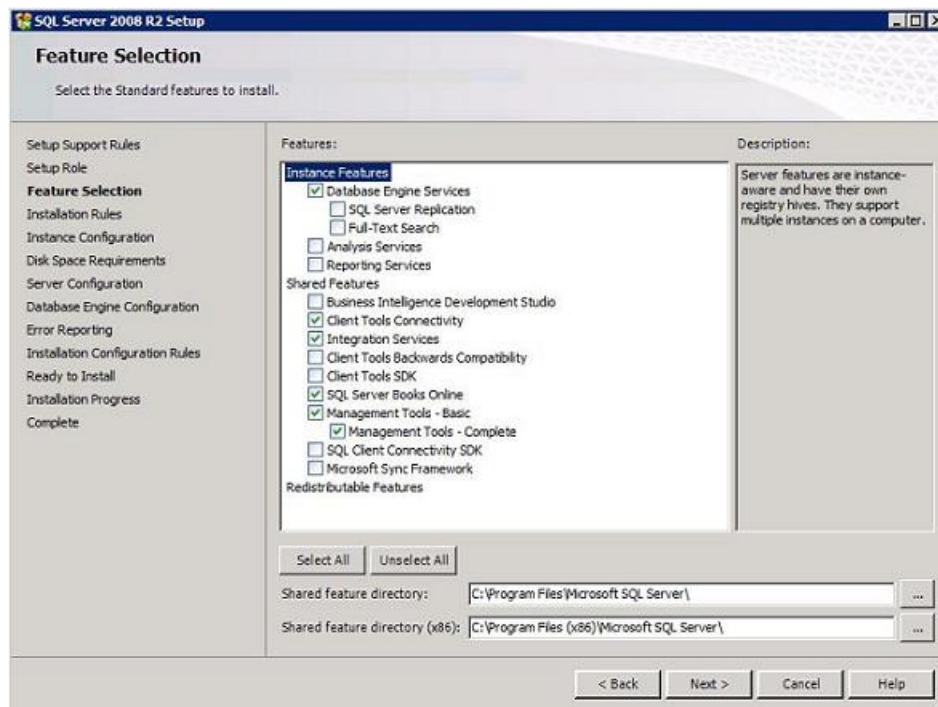
1. Log into Windows as an administrator-level user.



CAUTION!

If the .NET Framework is not installed and enabled, the SQL Server 2008 RTM installation may fail on Windows Server 2008. This problem can occur because installation of the .NET Framework 3.5 is a prerequisite for the SQL Server 2008 installation, but on Windows Server 2008, .NET Framework 3.5 is not installed by default. It is included as a Windows component.

2. Launch the installer. If a To enable the .NET Framework Core role, click OK message appears, click **OK**.
3. Select **Installation** from the menu on the left of the SQL Server Installation Center.
4. To perform a new installation of SQL Server 2008, select the first option, **New installation or add features to an existing installation**.
5. On the Setup Support Rules screen, ensure that no installation problems have been identified. Click **OK**.
6. On the Product Key screen, enter the product key. Click **Next**.
7. On the License Terms screen, read the license agreement and select the **I accept the license terms** checkbox. Click **Next**.
8. On the Setup Support Files screen, click **Install**.
9. On the Setup Support Rules screen, ensure that no significant errors exist and investigate any warnings. Click **Next**.
10. On the Setup Role screen, select **SQL Server Feature Installation**. Click **Next**.
11. On the Feature Selection screen, select the required components (as in the image that follows) and click **Next**.



12. On the Installation Rules screen, ensure that no failures have occurred. Click **Next**.
13. On the Instance Configuration screen, select **Default instance**. Click **Next**.
14. On the Disk Space Requirements screen, ensure that sufficient disk space exists for the features you have selected. Click **Next**.
15. On the Server Configuration screen, on the Service Accounts tab, click **Use the same account for all SQL Server services**.
16. In the dialog that follows, for the Account Name, select **NT AUTHORITY\SYSTEM** and leave the Password blank. Click **OK** and then click **Next**.
17. On the Database Engine Configuration screen, on the Account Provisioning tab, select **Mixed Mode (SQL Server authentication and Windows authentication)** and type the sa (system administrator) password.
18. To add the administrative user, click **Add Current User**. Click **Next**.
19. On the next two screens, Error Reporting and Installation Configuration Rules, accept the default values by clicking **Next**.
20. On the Ready to Install screen, click **Install**.
21. On the Installation Progress screen, after the installation completes, click **Next**.
22. On the Complete screen, click **Close**.
23. Close the SQL Server Installation Center.
24. Restart the computer and log into Windows as an administrator-level user.

2. Stopping SQL Server services

(Topic number: 109422)

Before proceeding with the next task, stop the Windows SQL Server services, if they have been started.

To stop SQL Server services

1. Open the Windows Administrative Tools.
2. Select **Services**.
3. Select each of the following services in turn and click **Stop Service**, if needed:
 - a. **SQL Server Browser**
 - b. **SQL Server Integration Services 10.0**
4. Close the Services window.

You can now install SQL Server 2008 R2 SP1.

3. Upgrading SQL Server 2008 R2 to SQL Server 2008 R2 SP1

(Topic number: 141822)

The SQL Server 2008 R2 SP1 executable file is **SQLServer2008R2SP1-KB2528583-x64-ENU.exe** (64-bit). You must acquire this file from Microsoft; for example, you can download it from the Microsoft website at <http://www.microsoft.com/download/en/details.aspx?displaylang=en&id=26727>.

To upgrade SQL Server 2008 R2 to SQL Server 2008 R2 SP1

1. Download **SQLServer2008R2SP1-KB2528583-x64-ENU.exe**.
2. Run the SP1 installer executable and follow the instructions.

4. Troubleshooting: Server name registered in SQL Server is incorrect

(Topic number: 7625)

Issue

If the server name registered in SQL Server is not the same as the server name registered in Windows, you must update the server name in SQL Server.

Details

This discrepancy may happen if you use a ghost image when installing the third-party applications.

Solution

To check the server name registered in Windows

1. Right-click **My Computer** and select **Properties**.

2. Switch to the **Computer Name** tab.
The server name is listed as the full server name.

To check the server name registered in SQL Server

1. In a SQL Server query window, type **select @@servername**

To update the server name registered in SQL Server

1. In the SQL Server query window, type:
sp_dropserver old_server_name
go
sp_addserver server_name_as_in_Windows, local
go

5. Installing the IMPAX 6.5.3 AS300 packages on a new SQL Database Server

(Topic number: 125936)

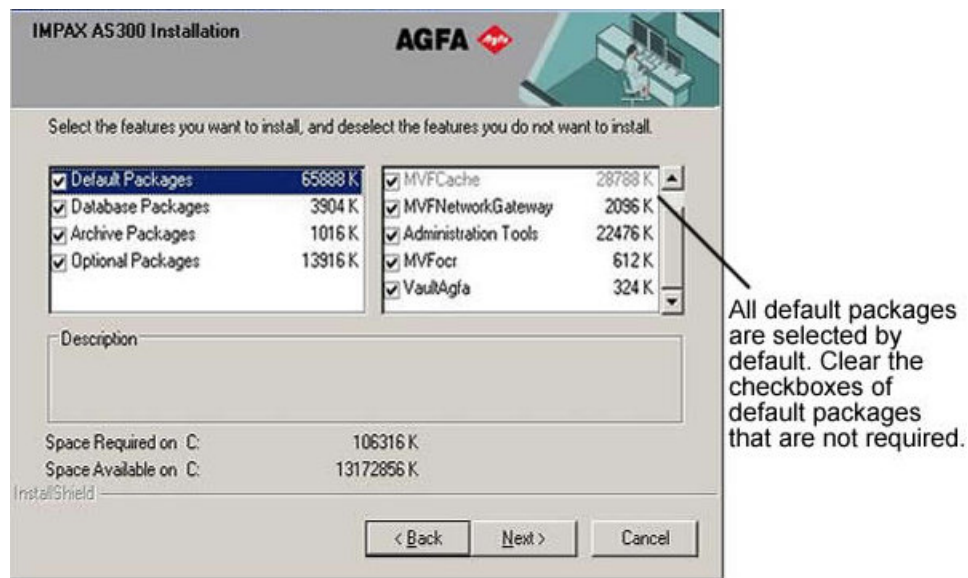
To install IMPAX AS300 Server, you must be logged into Windows as an administrator-level user. Use the IMPAX installer to install the necessary AS300 packages on the system. These packages are described in *AS300 installer packages reference* (refer to page 73).

To install the IMPAX 6.5.3 AS300 packages on a new SQL Database Server

1. Insert the IMPAX AS300 DVD or access the ISO file.
2. Double-click **as300-installer.exe**.
3. Type your name (minimum three characters).
This information is recorded in the installer log file.
4. On the Welcome screen, click **Next**.
5. On the Select features screen, all Default Packages are selected. Clear the checkboxes of any packages that should not be installed.

For a dedicated Database Server, normally clear the **MVFNetworkGateway** and **MVFocr** checkboxes.

For a single-host server, normally all Default Packages are required except, potentially, **MVFocr**.



6. Select the **Database Packages** label.
7. Clear the **Oracle Server Extension** checkbox and select the **SQL Server Extension** checkbox.
8. For a dedicated Database Server (no archive), or if using PACS Store and Remember archiving only, clear the **Archive Packages** checkbox.
9. Select the **Optional Packages** label, then select the checkboxes of any optional packages that should be installed.
 - Select the **MVFCurator** and **MVFclexport** checkboxes only if intending to install the Curator and CD Export server components on the Database Server rather than on a dedicated Curator server.
 - Select the **MVFPap** package only if the server is being used for archiving.
 - Clear the **MVFchangeaccepter** checkbox.
 - Do **not** select the MVFScavenger or the MVForadg checkbox.
10. Click **Next**.
11. If a Network Gateway package was installed, browse to the location of the MVF license file and click **OK**.

If the mvf.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
12. If an Archive package was installed, browse to the location of the archive license file and click **OK**.

If the mvfarch.lic file is not located in C:\mvf, the file is copied to that location. A dialog informs you of the success of the copy task.
13. At the Confirm: Your existing database is compatible with this version prompt, click **Yes**.

14. On the Summary screen, to continue the installation, click **Next**.
15. After all the packages have been installed, click **Yes, I want to restart my computer now**.

If you are not prompted to restart the computer, manually restart it.

After the server restarts, log into Windows as an administrator-level user.

Upgrading the database

3

Once the new IMPAX 6.5.3 cluster is staged, you must install the Migration Toolbox on the following servers:

- IMPAX 5.3 or earlier Database Server
- IMPAX 6.5.3 Database Server
- IMPAX 6.5.3 Application Server

You can then use those tools to assist in the process of upgrading the database on the new Database Server, using backup and restore.

1. Installing the Migration Toolbox on a Windows server

(Topic number: 11493)

To install the Migration Toolbox, you must be logged into Windows as an administrator-level user. The migration tools are on a dedicated Migration CD.

To install the Migration Toolbox on a Windows server

1. From the IMPAX Migration CD ISO, navigate to the **win32** directory and double-click **impax_65_migration-winpkg-6.5.3.xxx.exe** where xxx is the build number.
2. In the InstallShield Self-extracting EXE dialog, click **Yes**.
Setup progress dialogs appear.
3. On the Welcome screen, click **Next**.

4. On the Select Features screen, select the checkboxes of the features that you want to install, and clear the rest.

When migrating a SQL Server database, select all the features except the **Oracle on Windows Migration Tools**.

5. Click **Next**.
6. To continue, click **Install**.
7. If you selected the Worklist and Report Migration Tools on the Select Features screen, when prompted, press any key to continue.
8. On the Setup Complete screen, click **Finish**.

The Migration Tools are installed in the C:\mvf-mig6\bin directory, with the following exceptions for SQL Server databases:

Executable	Installed in
migrate-users	C:\mvf-mig6\UserMigration
Training/Traveling Server (MigrateTRServer.exe)	C:\mvf-mig6\MigrateTRServer

2. Installing the PMTS tool set

(Topic number: 125155)

The PMTS tool set used to de-reference and re-reference cache and archive locations as these change from one system to the next. You can obtain this from Agfa. (It is not distributed with IMPAX software.) Install this tool set when needed.

To install the PMTS tool set

1. Run **MVFdact.exe**.
2. When prompted, click **Finish**.

3. Creating the pre-migration schema on an AS300 or WEB1000 server

(Topic number: 57475)

These steps assume that the Migration Tools have been installed on the Database Server that you are running the commands on, and that you are logged into Windows as an administrator-level user.

To create the pre-migration schema on an AS300 or WEB1000 server

1. Open a command prompt.
2. Change to the **C:\mvf-mig6\bin** directory.

3. Type the following:
build-impax-mig-schema.bat sa sa mvf
4. At the Do you want to proceed? prompt, type **y**.

The pre-migration database schema and data are created.

4. Setting up a connection to a previous-version AS300 database

(Topic number: 6627)

Use this procedure to connect the Application Server to an IMPAX 4.5, 5.2, or 5.3 AS300 Database Server.

To set up a connection to a previous-version AS300 database

1. To use the 32-bit version of the ODBC Data Sources tool, run
C:\Windows\SysWOW64\odbcad32.exe.
Do not select **Data Sources (ODBC)** through the Windows Administrative Tools as this runs the 64-bit version of the tool.
2. Switch to the **System DSN** tab.
3. Click **Add**.
4. In the Create New Data Source dialog, select **SQL Server** from the list. Click **Finish**.
5. In the Name field, type the appropriate value:
For IMPAX 4.5 upgrades, use **mvf_45**.
For IMPAX 5.2 upgrades, use **mvf_52**.
For IMPAX 5.3 upgrades, use **mvf_53**.
The *mvf* name is already being used by the temporary IMPAX 6.5.3 AS300 server.
6. In the Description field, type **mvf** (lowercase).
7. In the Server field, type or select the name of the 4.5, 5.2, or 5.3 AS300 server. Click **Next**.
8. Set the authentication according to the authentication used at the site (**Windows NT** or **SQL Server**).
9. If necessary, select the **Connect to SQL Server** checkbox and supply a Login ID and Password.
10. If necessary, change the network library by clicking **Client Configuration**. Under Network libraries, select the protocol used to communicate with the SQL server at your site: either **TCP/IP** (the default) or **Named Pipes**. Click **OK**.
11. Click **Next**.
12. Change the default database to **mvf** (lowercase). Click **Next**.
13. Click **Finish**. Click **OK**.

You can now run Migration Tools user commands against this 4.5, 5.2, or 5.3 server.

5. Taking a system snapshot

(Topic number: 7613)

Before upgrading to IMPAX 6.5.3, use the `migration_inventory` tool to capture the current state of the system for later comparison. Perform this task on any computer that has access to the AS300 database to be migrated and on which the Migration Tools have been installed.

To take a system snapshot

1. At a command prompt, change to the `C:\mvf-mig6\bin` directory.
2. Type

```
migration_inventory -d database_name -U database_user_name -P database_password -s  
-D Database_Server_host_name
```

The output is stored in the `migration_info` table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.

3. To create a report file with this information, type

```
mig_reporter -t system_inventory_tool
```

This command writes the output of the `migration_inventory` command to a report file in the `C:\mvf-mig6\reports` directory.

6. Stopping antivirus software

(Topic number: 7616)

If you have antivirus software installed on any Windows-based servers, ensure that no scan jobs are running that would interfere with the upgrade process. Stop the antivirus services.

To stop antivirus software

1. On a Windows server to upgrade, launch the antivirus software.
2. Halt the scan operation according to the vendor's instructions.

7. Identifying the report source

(Topic number: 68030)

When upgrading the database, you will be prompted for the report source. When prompted, supply the value stored in the `requesting_service` field in the Connectivity Manager database. To prepare for the upgrade, identify this value in advance.

To identify the report source

1. On the Connectivity Manager, open osql and type
use mcf;
select distinct requesting_service from mcf_service_request;
2. To prepare for upgrading the database, note the value stored in the requesting_service field.
The requesting_service value is case-sensitive.
3. If multiple values are returned in the requesting_service field, consult a Connectivity Manager integrator, as data and mappings may need to be updated.
If this Connectivity Manager receives data from multiple report sources, separate requesting_service values may exist that match each report source.

8. Backing up the IMPAX production database

(Topic number: 123343)

Perform a complete backup of the existing production database, to then be restored on the new IMPAX Database Server. Services are stopped and removed as part of this process, so time it to minimize disruption at the site, or use a travelling server during this period.

To back up the IMPAX production database

1. On the IMPAX production Database Server, open a command prompt.
2. Change to the C:\mvf\bin directory.
3. Type
stopall.bat
4. Type
removeall.bat
Previous IMPAX versions may have a scheduled task to watch for stopped services and restart them. The removeall.bat script removes the services (not the software itself), so that the services cannot be restarted. This ensures that the system is cold so the backup is complete.
5. Repeat the preceding steps on the other IMPAX server stations in the production cluster.
6. On the production Database Server, go to or open a command prompt and type
isqlw
7. When prompted, type **sa** as the user name and type the sa password.
8. To back up the database, type
backup database mvf to disk = 'file_path:\mssql\backup\oldserver.dat' with stats
where *file_path* is the location of the database files. For example
backup database mvf to disk = 'C:\Program Files\Microsoft SQL Server\MSSQL\BACKUP\oldserver.dat' with stats, init

9. At the next command prompt, type

backup log mvf to disk = 'file_path:\mssql\backup\oldserver.dat' with stats

The oldserver.dat produced contains two files: the database backup and the transaction log backup.

10. From the C:\mvf\bin directory, type

installall.bat

This restores the services removed earlier.

11. To start up IMPAX, type

startall.bat

After the cold backup is taken, the IMPAX 5.3 or earlier system can continue to function as the production system until the transition to the new IMPAX 6.5.3 is completed.

9. Restoring the database on the new SQL Database Server

(Topic number: 7627)



CAUTION!

Perform this task only when replacing an existing server with a new server. Be very careful not to delete any live database files. Perform this procedure only on a new server that has not had any clinical use, even as a training server. Do not perform this procedure on any production, training, or traveling servers.

When replacing the existing server with a new server, you first install the IMPAX 6.5.3 server software on the new server. You then restore the backed-up database on the new server, as described in this topic, before upgrading the schema.

To restore the database on the new SQL Database Server

1. Ensure that the new server database partition is as large as the original physical data files.

Independent of the size of the backup, the restore causes the new data files to be as large as the original ones.

2. If not already done, shut down related services.

- a. To stop the IMPAX services, on all servers in the cluster, open a command prompt and type

stopall.bat

- b. Shut down all applications that usually connect to the SQL Server database. Under Services, stop the SQL Server agent. Also, shut down the SQL Server Query Analyzer when not using it as part of the restore process.

- c. On the Application Server, open the Windows Administrative Tools and select **Services**. Right-click each of the following and select **Stop: IMPAX App Server Data Manager, IMPAX Audit Event Log Manager, IMPAX Dicom Object Sender, IMPAX Distributed License Manager, IMPAX Messaging Service, and World Wide Web Publishing**.
3. Before starting the restore, confirm that the directory that will contain the mvf database file has the correct permission:
 - a. In Windows Explorer, right-click the folder and select **Properties**.
 - b. Switch to the **Security** tab.
 - c. Click **Edit**.
 - d. Click **Add**.
 - e. Select **ImpaxSQLUser** and click **OK**.
 - f. Grant **Full Control** to ImpaxSQLUser and click **OK**.
 - g. To close the Properties dialog, click **OK**.
4. If you are restoring from tape, insert the backup tape into the tape drive.
5. In the Explorer window of the SQL Server Management Studio, expand **server > Databases** where *server* is the name of the SQL Server that IMPAX is running under.
6. Right-click **Database** and select **Restore Database**.
7. In the Destination for restore section, in the To database field, type **mvf**.
8. In the Source for restore section, select **From device** and specify the backup media and location.
9. Under Select the backup sets to restore, select the **mvf-Full Database Backup** set.
10. Select the **Options** page.
11. In the Restore the database files section, change the location of the data files as needed.
12. Select **Leave database ready to use by rolling back uncommitted transactions. Additional transaction logs cannot be restored**. Click **OK**.

The database is restored. A message confirms a successful restore.
13. Create IMPAX-specific users:
 - a. Open SQL Server Management Studio.
 - b. Open a new query window.
 - c. Select **File > Open** and browse to C:\mvf\etc.
 - d. Select **add_group.sql** and click **Open**.
 - e. To execute the script, press **F5** or click **Execute**.
 - f. Execute the **procedures_mvf.sql** and **recreate_user_mvf.sql** scripts as well.
14. To update the statistics for performance reasons, open a SQL Server Management Studio query window and type

```
use mvf

exec sp_updatestats
```

go

15. In a command prompt, change to the **C:\mvf\bin** directory.
16. Type **clui** and confirm that you can successfully query the database.
17. On the Application Server, open the Windows Administrative Tools and select **Services**. Right-click each of the following services and select **Properties**. From the Startup type list, select **Automated**. Click **Start**, then click **OK**.
 - a. **IMPAX App Server Data Manager**
 - b. **IMPAX Audit Event Log Manager**
 - c. **IMPAX Dicom Object Sender**
 - d. **IMPAX Distributed License Manager**
 - e. **IMPAX Messaging Service**
 - f. **World Wide Web Publishing**

10. Upgrading the restored database schema to IMPAX 6.5.3

(Topic number: 125158)

Upgrading the IMPAX 5.3 or earlier database schema requires using PMTS along with scripts installed from the IMPAX Migration CD. Perform this task on the new Database Server.

To upgrade the restored database schema to IMPAX 6.5.3

1. Before starting the upgrade, change the SQL Server System Administrator password to sa.
 - a. On the new Database Server, open a command prompt and type
passkey.exe -M QUERY -u sa
 - b. Note the returned password.
 - c. Open the SQL Server 2008 Management Studio and clear the **Enforce password policy** checkbox.
 - d. From the Security directory in Object Explorer, open the **Logins** folder.
 - e. Right-click on **sa** and select **Properties**.
 - f. From the Login Properties dialog, clear the **Enforce password policy** checkbox.
 - g. In SQL Server 2008 Management Studio, select the **New Query** button.
 - h. In the SQL Query Window, type
exec sp_password 'current_sa_password_from_passkey','sa','sa'
2. If upgrading from IMPAX 4.5, first upgrade the database to IMPAX 5.2.
 - a. Open a command prompt and change to the **C:\mvf\bin** directory.
 - b. To upgrade the database to IMPAX 5.2, type

migrate-mi-server-database.bat

- c. Then run the associated script by typing

migrate-it-ws-database.bat

3. Change to the **C:\mvf-mig6\bin** directory.

4. If upgrading from IMPAX 5.2, type

database-upgrade-script.bat -U sa -P *sapwd* -v 52

or, if upgrading from IMPAX 5.3, type

database-upgrade-script.bat -U sa -P *sapwd* -v 53

where *sapwd* is **sa** in this case.

5. At the prompt

Ready to upgrade database to version 6.5.3. Do you want to proceed [y, n]?

Type **y** to continue.

6. If prompted for the fully qualified host name of the login server, type the fully qualified host name of the Application Server.
7. When prompted for a report source, if the Connectivity Manager query you ran previously returned a single value, use that value as the report source. If the query returned multiple values for the `requesting_service` field, consult a Connectivity Manager integrator, as mappings may also need to be changed.
8. Once the upgrade script is completed, check the status of the upgrade (refer to page 35).
9. Log in using the sa password:

exec sp_password 'sa','sa','sa'

10. To start IMPAX, open a command prompt and change to the **C:\mvf\bin** directory.

11. Restart the services by typing

startall.bat

12. On SQL Server 2008 Management Studio, reset the SQL Server password policy.
- a. From the Security directory in Object Explorer, open the **Logins** folder.
 - b. Right-click **sa** and select **Properties**.
 - c. From the Login Properties dialog, select the **Enforce password policy** checkbox.

11. Checking the status of SQL Server upgrades

(Topic number: 9914)

After upgrading the database, check the log file to ensure that the upgrade was successful.



Important!

We recommend checking the migration log file after each leg of an upgrade before moving on to the next leg.

To check the status of SQL Server upgrades

1. Open the log file C:\mvf-mig6\data\logs\migrate_database_to_IMPAX6.5.3.log.
2. If the following warning appears in the log file, you can safely ignore it:

Warning: The table 'CHANGE_CONTEXT_DETAIL' has been created but its maximum row size (8095) exceeds the maximum number of bytes per row (8060). INSERT or UPDATE of a row in this table will fail if the resulting row length exceeds 8060 bytes.

3. Ensure that Migration Complete Successful appears at the end of the log file.

If this message does not appear, review the rest of the log file to see where the upgrade failed. Solve the problem, then rerun the upgrade script.

12. Taking a post-upgrade system snapshot

(Topic number: 6845)

After upgrading to IMPAX 6.5.3, use the migration_inventory tool to capture the state of the system to compare it with the previous IMPAX system. Perform this task on any computer on which the Migration Tools have been installed that can access the 6.5.3 Database Server.

To take a post-upgrade system snapshot

1. In a command prompt or terminal window, change to the directory containing the migration_inventory tool.
2. On a Windows server, type

migration_inventory -s -d database_name -U database_user_name -P database_password -D Database_Server_host_name

The output is stored in the migration_info table. It lists the number of IMPAX studies, total objects, and objects in cache. It also lists all IMPAX source stations and DICOM printers.

3. To create a report file with this information, type

mig_reporter -t system_inventory_tool (Windows)

This command writes the output of the migration_inventory command to a report file in the /usr/mvf-mig6/reports or C:\mvf\mig6 directory.

13. Comparing pre- and post-upgrade snapshots

(Topic number: 6895)

Open the report file that contains the pre- and post-upgrade snapshot information. Compare the pre- and post-upgrade information. Ensure that all expected studies, objects, stations, and DICOM printers are still listed.

14. Restarting antivirus software

(Topic number: 9916)

If you have antivirus software installed and have halted any scan jobs, restart the antivirus services.

To restart antivirus software

1. On a Windows server where scanning was stopped, launch the antivirus software.
2. Start the scan operation according to the vendor's instructions.

Migrating the archive

4

The studies previously managed in a direct attached archive need to be made accessible in the new IMPAX 6.5.3 cluster. Do this initially using PACS Store and Remember. These can then gradually be converted to HSM archive entries.

1. Installing PACS Store and Remember on the IMPAX 6.5.3 cluster

(Topic number: 132671)

To convert DAA entries to PACS Store and Remember, install and configure a PACS Store and Remember AE title on the IMPAX 6.5.3 cluster, then install the PMTS tool set on the PACS Store and Remember server of that cluster.

You can install the PACS Store and Remember component on any non-Archive Server of the new IMPAX 6.5.3 cluster, including any of the Network Gateways or the Database Server.



Important!

These tasks are applicable only to a parallel migration with DAA Server scenario or with an HSM archive that will remain in the old cluster. Converting a cached Network Gateway to a PACS Store and Remember archive is not supported.



Install a separate PACS Store and Remember archive for each DAA archive. For example, if the legacy IMPAX system has two DAA libraries, install two PACS Store and Remember servers on the IMPAX 6.5.3 system.

1. Adding a PACS Store and Remember archive

(Topic number: 9215)



To configure an external PACS archive as a PACS Store and Remember archive, set up the external PACS archive in Network Management in the IMPAX Administration Tools.

To add a PACS Store and Remember archive

1. Launch and log into the IMPAX Administration Tools.
2. On the Setup tab, click **Network Management**. 
3. To set up a new destination, click **New**. 

4. Type the AE title of the external PACS archive.

If adding the PACS archive for DAA consolidation purposes, use a temporary AE title here, such as SR_EXT. Later, this is changed to the AE title of the old archive.

5. Type an alias for the archive.
6. Type the host name or IP address of the archive.
7. Click **Save**. 
8. Switch to the **Capabilities** tab.
9. From the list at the bottom of the manager, select the added external PACS archive.
10. Under Station Type, select **PACS**.
11. Under Server is Allowed to, select **Query/Retrieve from Station**.
12. If using different AE titles on the external PACS archive for store and retrieve jobs, repeat steps 3 to 11 for the retrieve AE title.
13. Click **Save**. 

If migrating a Direct Attached Archive (DAA), do not run the install_pacs.bat or install_pacs script. The PMTS tool handles this.

2. Connecting to PACS Store and Remember in the other cluster

(Topic number: 125161)

You must connect the IMPAX 5.3 or earlier cluster to the new IMPAX 6.5.3 PACS Store and Remember archive.

To connect to PACS Store and Remember in the other cluster

1. Obtain (refer to page 19) and install an archive license key on the new PACS Store and Remember server.
2. In the IMPAX 5.3 or earlier system, log into the IMPAX Service Tools.
3. On the Setup tab, click **Network Management**.

4. Add the IMPAX 6.5.3 system. Save the settings.
5. Verify that the external archive is listed in the **hosts** file of the IMPAX 5.3 or earlier system.
6. To confirm that the external archive can be accessed, ping the external archive using the host name or IP address.



Important!

The PACS Store and Remember archive functionality requires that an SCP be running on the new system. If not available, add the Network Gateway package to one of the IMPAX 6.5.3 servers.

2. Converting DAA entries to PACS Store and Remember

(Topic number: 123349)

Because the database on the IMPAX 6.5.3 system was upgraded from the previous IMPAX system, it contains references to the DAA system that is no longer supported. Use a re-referencing tool to convert these DAA entries to PACS Store and Remember archive entries.

To convert DAA entries to PACS Store and Remember

1. On the IMPAX 6.5.3 Database Server, open a command prompt and change to the **C:\mvf\bin** directory.
2. To mark all DAA references as offline, type

bash mvf-offline-vols -x

If the following message appears, it indicates a bash version issue:

NOTE: Using the -x to execute updates will update all AE_REFs if there are multiple AE_REFs listed above.

3. If you need to work around the bash version issue, in the command prompt, type

bash

\$.\mvf-offline-vols -x

exit

4. To verify that all DAA references are offline:
 - a. Ensure that the script ends by displaying HSM and offline studies.

For example:

```
1002 H    1.00000
1004 O    2.00000
```

In this output **H** indicates *HSM* and **O** indicates *offline*.

- b. Log into the Administration Tools and select **Study Manager**. Ensure that all DAA archived studies are marked off-line.
- c. Launch CLUI, run the following statement, and ensure that studies are listed as offline:

```
select count(*) from dosr_study_location where volume_type = 'O'
```

5. To convert the DAA entries to PACS Store and Remember, on the PACS Store and Remember server, open a command prompt and type

```
convert_to_remote_archive.exe -A PACS_AE_title [-R retrieve_PACS_AE_title] [-S source_archive_AE_title]
```

where *PACS_AE_title* refers to the external Store and Remember archive configured on the IMPAX 6.5.3 system and *source_archive_AE_title* refers to the DAA system to be replaced.



Tip:

You can also specify a log file by including **-l debug -f logfile** in the command.

6. Verify that all the offline studies are now marked as PACS archived.
 - a. Open CLUI and type


```
select count(*) from dosr_study_location where volume_type = 'P'
```
 - b. Ensure that the following query returns a count of zero:


```
select count(*) from dosr_study_location where volume_type = 'O'
```
 - c. In the Administration Tools Study Manager, ensure that the offline studies are marked PACS archived.

7. If you want to prevent additional archiving to this PACS Store and Remember archive, open CLUI and type

```
Delete from dosr_archive_destination where queue_ref = Store_and_Remember_archive_queue_ref
```

```
Delete from dosr_study_destination where queue_ref = Store_and_Remember_archive_queue_ref
```

8. Check the log file for any errors. Should you find any, contact Agfa Professional Services for assistance as you may need to manually update the database before running the tool again.



Note:

Check the concurrency of the newly added PACS Store and Remember archive and, depending on the site, determine whether it should be modified or left as is.

3. Removing references to old caches and archives from the IMPAX 6.5.3 servers

(Topic number: 123352)

The upgraded IMPAX 6.5.3 database may contain references to caches and archives from the old cluster that are no longer part of the IMPAX 6.5.3 cluster. Once the caches and archive locations themselves are removed, you can use a tool to remove references to them.



Important!

Before removing the old AE titles from the new system, determine whether you want to maintain the Task Scheduler settings. This is especially important if they have been changed from the default settings. The Primary Task Scheduler is normally the one running on the Database Server.

To remove references to old caches and archives from the new servers

1. On the IMPAX 6.5.3 Database Server, open a command prompt and change to the **C:\mvf\bin** directory.

2. To remove image caches and locations of Network Gateways that are no longer applicable, type

bash mvf-remove-caches -a *Network_Gateway_AE_title*

This bash script has no log files. All of the information is output to the screen.

3. To remove image caches and locations of DAA archives that are no longer applicable, type

bash mvf-remove-caches -a *DAA_archive_AE_title*

After removing caches, the `is_cached` flag in the `dosr_study` may not be accurate.

4. To fix the `is_cached` flag, type

Select `module_ref` from `mvf_ts_config` where `module_name` = 'UPDATE_IS_CACHED' and `ae_ref` = *local_AE_reference*

Signal `WAKE_MVF_TASK_SCHEDULER_MODULE` *module_ref_from_previous_command* `MVF_TASK_SCHEDULER`

5. To update the primary task scheduler setting in `map_ini` if it exists, type

select * from `map_ini` where `ini_section` = 'MVF_TASK_SCHEDULER' and `ini_key` = 'PRIMARY_SERVER'.

6. To copy the Task Scheduler settings from the 5.3 or earlier Database Server, open CLUI and type

Update `map_ini` set `ini_value` = '*new_Database_Server_AE_title*' where `ini_section` = 'MVF_TASK_SCHEDULER' and `ini_key` = 'PRIMARY_SERVER'

If this entry does not exist, insert it instead of updating.

7. To maintain the old settings for the Primary Task Scheduler, delete the new ones by typing
Delete from mvf_ts_module_config where ae_ref = new_Database_Server_AE_reference
Delete from mvf_ts_config where ae_ref = new_Database_Server_AE_reference
8. To update the existing entries to point to the new system, type
Update mvf_ts_module_config set ae_ref = new_Database_Server_AE_reference where ae_ref = old_Database_Server_AE_reference
Update mvf_ts_config set ae_ref = new_Database_Server_AE_reference where ae_ref = old_Database_Server_AE_reference
9. Restart the Task Scheduler on the new Database Server.
10. Repeat steps 7–9 for the Secondary Task Schedulers and whenever the default values have been modified in the old system.
11. To remove all references to DAA archives, Network Gateways, and other systems in the old cluster (such as the Database Server) that are no longer applicable to the new IMPAX 6.5.3 cluster, type
mvf-remove-ae.exe -d mvf -U mvf -P mvf AE_title -l debug -f logfile



Tip:

To find the AE title for a specific station, open CLUI and run the **select * from map_ae** command.

12. Check the log file for any errors.
13. If using a temporary PACS archive, to rename it with the AE title of the DAA archive server in the old cluster, type
modify_ae_title.exe -o current_AE_title -n target_AE_title -l debug -f logfile
For example:
C:\mvf\bin> **modify_ae_title.exe -U sa -P sa -o SR_EXT -n ASJDVD -l debug -f logfile**
14. Check the log file for any errors.
15. For the PACS Store and Remember archive to work successfully, add back any cached systems from the IMPAX 5.3 or earlier cluster to the IMPAX 6.5.3 database.
Assign them the same configuration in Network Management as you did for the PACS Store and Remember archive destination.

4. Moving other servers to IMPAX 6.5.3

(Topic number: 132668)

Where applicable, you can optionally move some IMPAX 5.3 or earlier Network Gateway, PACS Store and Remember, or HSM servers from that cluster to the IMPAX 6.5.3 cluster.



Note:

The IMPAX 6.5.3 AS300 server platform is Windows Server 2008 R2 SP1. If necessary, existing servers can be restaged with this operating system, assuming that the hardware is 64-bit compatible. All upgrades are forklift upgrades and involve fresh installations onto restaged or new hardware. Refer to the *IMPAX 6.5.3 AS300 Installation and Configuration Guide* for more details.



Prior to a forklift upgrade of an IMPAX AS300 Network Gateway, Archive Server, or Curator, any critical files should be backed up to an appropriate location. During the upgrade itself, the files on the new server can be compared with that of the old server.

1. Halting all queues

(Topic number: 59660)

Halt all queues until the upgrade is done.

To halt all queues

1. In the Service Tools, on the Daily tab, select **Job Manager**. 
2. In the queue list, select **All Queues**.
3. Click **Halt Queue**. 
4. To confirm that you want to halt the queues, click **Yes**.

2. Removing references from the database running the previous version of IMPAX

(Topic number: 123355)



Important!

Perform these steps only if migrating some HSM, PACS Store and Remember, or Network Gateway servers from the IMPAX 4.5 or 5.2 system to the new IMPAX 6.5.3 system, and intending to run both systems in parallel.

To move some servers from the IMPAX 5.3 or earlier system to the new IMPAX 6.5.3 system, remove references to these from the IMPAX 5.3 or earlier database.

To remove references from the database running the previous version of IMPAX

1. Copy the **MVFDact.exe** file to the IMPAX 5.3 or earlier Database Server and run the file.
2. Open a command prompt on that server and change to the **C:\mvf\bin** directory.
3. To remove references to HSM server image caches and locations that are only in the IMPAX 6.5.3 system, type

bash mvf-remove-caches -a HSM_AE_title

This bash script has no log files. All of the information is output to the screen.

4. To remove references to the HSM server archive locations, type

mvf_remove_archive_pre6.exe -A *HSM_AE_title* -d mvf -U mvf -P mvf -Q -l debug -f logfile



Important!

De-referencing HSM server archive location may take between 4 and 8 hours, depending on the system and the size of the archive being removed.

5. To remove image caches and locations of Network Gateways that are no longer applicable, type

bash mvf-remove-caches -a *Network_Gateway_AE_title*

After removing caches, the `is_cached` flag in the `dosr_study` may not be accurate.

6. To fix the `is_cached` flag, type

Select `module_ref` from `mvf_ts_config` where `module_name` = 'UPDATE_IS_CACHED' and `ae_ref` = *local_AE_reference*

Signal `WAKE_MVF_TASK_SCHEDULER_MODULE` *module_ref_from_previous_command* `MVF_TASK_SCHEDULER`

7. To remove all references to HSM archives and Network Gateways that have migrated to the IMPAX 6.5.3 cluster, type

mvf-remove-ae.exe -d mvf -U mvf -P mvf *AE_title* -l debug -f logfile

Run this script once for each AE title to remove.

8. Check the log file for any errors.

3. Restarting the parallel IMPAX AS300 systems

(Topic number: 125419)

After any HSM and Network Gateway servers are upgraded and incorporated into the IMPAX 6.5.3 cluster, both IMPAX systems must be restarted to allow them to work in parallel.

To restart the job queues on the IMPAX systems

1. On the IMPAX 5.3 or earlier Database Server, restart the job queues:
 - a. In the Service Tools, select **Job Manager**.
 - b. To start every queue, from the Queue list, select **All queues**.
 - c. Click **Restart Queue**.
 - d. To confirm the queue restart, click **Yes**.
 - e. Close Service Tools.
2. Repeat the previous step in the IMPAX 6.5.3 Administration Tools.

3. To allow IMPAX 6.5.3 Client interaction, on the Application Server, open the Windows Administrative Tools.
4. Select **Services**.
5. Start the **World Wide Web Publishing Service (IIS)**.

5. Synchronizing clocks on Windows-based IMPAX systems

(Topic number: 6752)

If the system time on the Application Server and the image server (ASPFTP server) differs, the authentication tickets provided by the IMPAX Client are rejected by the ASPFTP server and image retrieval fails. You must configure the IMPAX systems to automatically synchronize their system time with a common server and remain synchronized.



Note:

Also ensure that the time zone for the computer is set correctly to indicate the time zone where the system is located.

The instructions that follow use the synchronization feature built into the operating system. When configured, Windows Time Service sets and synchronizes the system time with a standard time server.

Synchronizing Windows servers to an external time source

(Topic number: 58717)

Synchronize the Windows Server 2008 R2 servers on your network to an external time source to ensure that image data streaming operates correctly.



CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operating system and we cannot guarantee that these problems can be solved.

We recommend that you back up the registry before you change it, so that you can back out the changes, if necessary.

To synchronize Windows servers to an external time source

1. To open Registry Editor, select **Start > Run**, type **regedit**, and click **OK**.

2. To change the synchronization server to NTP, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\Type** subkey, change the REG_SZ value from NT5DS to NTP.
3. To specify if the local machine is a local time server, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags** subkey, change the REG_DWORD value to 5.
4. To enable the NTPServer, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer\Enabled** subkey, change the REG_DWORD value to 1.
5. To specify where the computer obtains time stamps, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Parameters\NtpServer** subkey, enter the list of DNS names or IP addresses.
If you use DNS names, append ,0x1 to the end of each DNS name.
6. To set the poll interval, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpClient\SpecialPollInterval** subkey, change the REG_DWORD value to the number of seconds between each poll.
The recommended value is **900 Base Decimal**, which polls the time server every 15 minutes.
7. To specify the maximum positive difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\MaxPosPhaseCorrection** subkey, change the REG_DWORD value to the maximum number of seconds.
The recommended value is **3600 Base Decimal**.
8. Similarly, to specify the maximum negative difference that triggers a synchronization, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\MaxNegPhaseCorrection** subkey, change the REG_DWORD value to the maximum number of seconds.
9. Exit the Registry Editor.
10. To stop and restart the Windows Time server, at a command prompt, type **net stop w32time && net start w32time**.

It may take up to an hour for this to take effect.

For more information, refer to the [Microsoft Knowledge Base article KB 816042](http://support.microsoft.com/kb/816042) (<http://support.microsoft.com/kb/816042>).

Synchronizing Windows servers to an internal time source

(Topic number: 58720)

Synchronize the Windows Server 2008 R2 servers on your network to ensure that image data streaming operates correctly. To configure the Primary Domain Controller (PDC) master without using an external time source, change the announce flag on the PDC master. Choose either the Application Server or the AS300 server as the PDC master and sync the other servers to it.



CAUTION!

Serious problems might occur if you modify the registry incorrectly. These problems might require that you reinstall your operating system and we cannot guarantee that these problems can be solved.

We recommend that you back up the registry before you change it, so that you can back out the changes, if necessary.

To synchronize Windows servers to an internal time source

1. To open Registry Editor, select **Start > Run**, type **regedit**, and click **OK**.
2. To specify if the local machine is a local time server, in the **HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\Config\AnnounceFlags** subkey, change **REG_DWORD** to **A**.
3. Exit the Registry Editor.
4. To stop and restart the Windows Time server, at a command prompt, type **net stop w32time && net start w32time**.

It may take some time for this to take effect.



Note:

Do not configure the PDC master to synchronize with itself.

Synchronizing with a time server when the IMPAX computer is a member of a domain

(Topic number: 58569)

To ensure that image data streaming operates correctly when the IMPAX computer is a member of a domain, use the synchronization feature built into the operating system.

To synchronize with a time server when the IMPAX computer is a member of a domain

1. Open a command prompt.
2. Type
w32tm /config /syncfromflags:manual /manualpeerlist:time_server
where *time_server* is the DNS name or IP address of the time server. The *time_server* can be any Windows- or Solaris-based server.
3. To update Windows Time Service to use the new configuration, type
w32tm /config /update
4. To synchronize the clock, type
w32tm /resync

Synchronizing with a time server when the IMPAX computer is not a member of a domain

(Topic number: 58572)

To ensure that image data streaming operates correctly when the IMPAX computer is not a member of a domain, use the synchronization feature built into the operating system.

To synchronize with a time server when the IMPAX computer is not a member of a domain

1. Open Control Panel.
2. Select **Date and Time**.
3. Switch to the **Server Internet Time** tab.
4. In the list, type or select the time server to synchronize with.

Managing the parallel migration

5


Certain tasks are performed while both the old and new systems are running in parallel. This permits a more gradual transition to the new version.

1. Enabling cluster linking

(Topic number: 10689)


Cluster linking refers to linking multiple sites so that users can query and retrieve studies from all of these sites.

To enable cluster linking

1. On the Setup tab, click **Network Management**. 
2. Switch to the **Configuration** tab.
3. From the list at the bottom of the tab, select the station to configure.
4. Select the **Cluster Linking** checkbox.
5. Select the options that apply:

Checkbox	When selected
Link Internal Queries	Allows internal queries to generate queries to linked clusters.
Link External Queries	Allows external queries from other systems to generate queries to linked clusters. Note that if a study has been retrieved from an external linked cluster into the local cluster, then external queries can see that study.
Link Cluster Updates	Allows updates to one cluster to be relayed to the other cluster (for example, a change to a study's status). Cluster updates are

Checkbox	When selected
	performed using a proprietary syntax and can only update clusters that use the same proprietary syntax.
Link Prefetching	Allows studies in the linked clusters to be included in the list of relevant prior studies so they can be prefetched to the local cluster.

6. Click **Save**. 
7. Perform an IIS reset on the Application Server.

Additional notes on linking internal queries

Enabling the Link Internal Queries checkbox uses a proprietary syntax to allow more information to be communicated between the two systems than in a strict DICOM query. This information includes:

- Interpretation (report) status (New, Dictated, Transcribed, Approved, and so on)
- Best study location (cache, non-cache)
- Number of images in the study (also available through DICOM in some instances)
- Specialty (as computed by the remote system using mapping tables)
- Body part (as computed by the remote system using mapping tables)
- Verified status of study

2. Migrating user data

(Topic number: 132956)

While the two systems are running in parallel, you can optionally migrate user data (user names, passwords, some preferences) from the previous to the new IMPAX cluster. For details, refer to the “Preparing for user migration” and “Migrating user data” sections of the *AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3*.



Note:

If the IMPAX 4.5, 5.2, or 5.3 site is using LDAP user authentication, user data is typically not migrated.

3. Manually upgrading the IMPAX Client from IMPAX 5.2 or 5.3

(Topic number: 51453)

Before upgrading the IMPAX Client, ensure that IMPAX 5.2 or 5.3 Select wizards information is exported to the users.xml file. For more details, consult the *AS300 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3* or the *AS3000 Preparing to Upgrade Guide—IMPAX 4.5, 5.2, 5.3, or WEB1000 to IMPAX 6.5.3*.

Perform the following steps when upgrading an IMPAX 5.2 or 5.3 Client workstation to IMPAX 6.5.3.



Note:

If you have many Clients to install, we recommend considering a third-party software distribution application (for example, Microsoft SMS or Altiris) to automate the add/removal of software.

To manually upgrade the IMPAX Client from IMPAX 5.2 or 5.3 to IMPAX 6.5.3

1. Verify that the hardware and operating system are compatible with IMPAX 6.5.3.
2. Uninstall the IMPAX Client.
3. Uninstall the IMPAX 5.2 or 5.3 documentation.
4. Run the Microsoft .NET Framework 3.5 SP1 installer package.
5. Install the IMPAX 6.5.3 Client.

For details, refer to “Upgrading the IMPAX Client” (topic 7996) in the *IMPAX 6.5.3 Client Installation, Upgrade, and Configuration Guide*.

6. Verify the IMPAX Client upgrade.
7. Configure the IMPAX Client.
8. Create standard worklists from the users.xml file.
9. Change the permissions for migrated teaching files.
10. Install any related software.

4. Installing and running the Cross-Cluster Dictation Interlock tool

(Topic number: 48033)

The Cross-Cluster Dictation Interlock tool synchronizes the dictation status of studies between old and new IMPAX systems when these are running in parallel—such as may happen when using a

training server, when using a traveling server (AS3000 sites), or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.



Note:

Do not confuse CCDI with Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later), running in parallel, to synchronize study status notifications and claim and assign messages between the two clusters as though they were one. For details, see “Understanding Dual Cluster Claim and Assign” (topic number 128193) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

A dictation interlock already exists within a single IMPAX cluster, preventing two users from dictating the same study. This tool extends that interlock to two IMPAX clusters: the previous version and the new. It uses native components within IMPAX to send signals between the two systems that a study’s dictation status has changed. During the installation and configuration, a new role and a service called Study Status Relay are created to convey and receive the messages.

Study statuses that are synchronized are the following:

- DICTATION_STARTED
- TRAINEE_DICTATION_STARTED
- INTERPRETATION_TRANSCRIBED
- INTERPRETATION_APPROVED
- DICTATION_COMPLETED
- TRAINEE_DICTATION_COMPLETED

1. Cross-Cluster Dictation Interlock installation prerequisites: IMPAX 5.2 or 5.3 upgrades

(Topic number: 48079)

The Cross-Cluster Dictation Interlock components are placed on the IMPAX 6.5.3 Application Server when the Business Services software is installed. You will find the components in the Tools sub-directory; for example, in C:\Program Files\Agfa\Impax Business Services\Tools\Cross-Cluster Dictation Interlock\Cross.Cluster.Dictation.Interlock_6.5.3.0.zip. You must extract the zip file. It contains both the 5.2/5.3 and the 6.5.3 components.

Select a computer in the IMPAX 5.2 or 5.3 cluster to place the Cross-Cluster Dictation Tool components on. It can be any computer running Windows, including a Client station, as long as that station does not get shut down or restarted frequently.

2. Copying the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

(Topic number: 48082)

To communicate dictation status with the IMPAX 6.5.3 system, Cross-Cluster Dictation Interlock components must be added to a Windows-based computer in the IMPAX 5.2 or 5.3 cluster.

To copy the 5.2 or 5.3 Cross-Cluster Dictation Interlock components

1. On the 6.5.3 Application Server where the zip file was extracted, from the mvf-signal-relay directory, copy the mvf_signal_relay.exe and install_signal_relay.bat files.
2. On the IMPAX 5.2 or 5.3 computer to run the components on, in the C:\mvf\bin directory, paste the two files copied in the previous step.
3. Open a command prompt and change to the C:\mvf\bin directory.
4. Type **install_signal_relay.bat remote_host_name**
where *remote_host_name* is the host name or IP address of the Application Server that will be running the IMPAX 6.5.3 Cluster Dictation Interlock service.
5. Open the Windows Administrative Tools and select **Services**.
6. Start the service.

The install_signal_relay.bat file installs the mvf_signal_relay.exe as a Windows service, inserts default values into the map_ini, and creates a radiologist and a trainee radiologist user. These users are used by the service to change status when appropriate. The radiologist user is called *signal-relay* and the trainee radiologist is called *sig-relay-train*.

3. Updating map_ini values for Cross-Cluster Dictation Interlock

(Topic number: 48091)

For the connection between the 5.2 or 5.3 cluster and the IMPAX 6.5.3 cluster to work, some of the default values added to the 5.2 or 5.3 IMPAX MAP_INI file must be changed.

To update map_ini values for Cross-Cluster Dictation Interlock

1. Launch CLUI.
2. To update the remote hostname, type
update map_ini set ini_value='remote_host_name' where ini_section='signal-relay' and ini_key='remote_host'
where *remote_host_name* is the name of the IMPAX 6.5.3 Application Server where the service will run.
3. To update the remote port value, type
update map_ini set ini_value='remote_port_value' where ini_section='signal-relay' and ini_key='remote_port'

where *remote_port_value* is the TCP port where the Application Server listens for signals.

- a. By default, the port number is 6000. To confirm the port number, navigate to the folder where *study-status-relay.bat* is installed (for example, C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay) and open the **Study.Status.Relay.exe.config** file in a text editor.
 - b. The port number value can be found under <StudyStatusRelayConfiguration> and between the <SignalListenerPort> and </SignalListenerPort> tags.
4. Optionally, change the default values of the *external_port*, *rad_user*, or *trainee_user* keys.

INI_SECTION	INI_KEY	INI_VALUE	Description
signal-relay	external_port	A valid port to listen for incoming signals. Default value is 6000.	The TCP port to listen for signals coming in from the remote cluster (whereas <i>remote_port</i> is used for forwarding signals).
signal-relay	rad_user	The user name used when changing the study status as a radiologist. The default value is <i>signal-relay</i> .	If you change this value, you must also configure this user in the IMPAX 5.2 or 5.3 Service Tools.
signal-relay	trainee_user	The user name used when changing the study status as a trainee radiologist. The default value is <i>sig-relay-train</i> .	If you change this value, you must also configure this user in the IMPAX 5.2 or 5.3 Service Tools.

4. Copying the 6.5.3 Cross-Cluster Dictation Interlock components

(Topic number: 59189)

Perform the following task on the IMPAX 6.5.3 Application Server.

To copy the 6.5.3 Cross-Cluster Dictation Interlock components

1. Copy the *study-status-signal-relay* folder from the Cross-Cluster Dictation Interlock zip in the Tools subdirectory to an appropriate folder on the 6.5.3 Application Server, such as to C:\Program Files\Agfa\Impax Business Services.

The service will run from anywhere, but you should place it in a folder that is unlikely to be deleted.

2. Open a command prompt and change to the directory containing the copied files.
3. Change to the **study-status-signal-relay** subdirectory.
4. Type

import-study-status-relay.bat

5. In the Apply Study Status Relay ADAM Schema dialog, click **OK**.


This creates a Study Status Relay role.

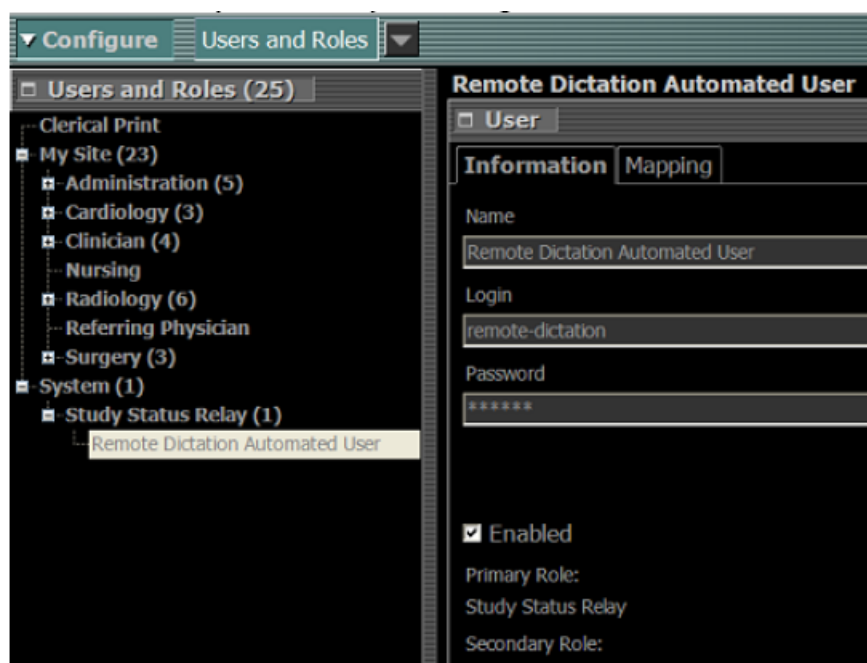
5. Configuring the Study Status Relay role

(Topic number: 48223)

The newly created Study Status Relay role requires a user called remote-dictation, and an appropriate license. Perform this task on the IMPAX 6.5.3 Application Server.

To configure the Study Status Relay role

1. Launch an IMPAX Client connected to the Application Server where the Study Status Relay role was created.
2. Log into the Client as an Administrator user.
3. From the **Configure** drawer menu , select **Users and Roles**.
4. In the navigation pane, right-click the **Study Status Relay** role and select **Add User**.
5. In the details pane, under the User bar, switch to the **Information** tab.
6. Type a Name for the user, such as **Remote Dictation Automated User**.
7. In the Login field, type **remote-dictation**.
8. Type in a Password and note what this password is.



9. In the navigation pane, select the **Study Status Relay** role again.
10. In the details pane, expand the **Licensing** bar.
11. In the navigation pane, right-click the **Study-Status Relay** role and select **Add License > Add license_type**

where *license_type* is an appropriate and available license for this role. (Dictation is not a license-controlled feature.)

The changes are saved automatically when you switch context.

6. Configuring the Study Status Relay service

(Topic number: 48230)

You can now configure the communication service between the previous version of IMPAX and IMPAX 6.5.3. The goal is to transmit relevant study status changes between these two clusters.

To configure the Study Status Relay service

1. On the 6.5.3 Application Server, open a command prompt.
2. Change to the **C:\Program Files\Agfa\Impax Business Services\study-status-signal-relay** directory.
3. Type

Study.Status.Relay.EncryptionTool.exe password_for_remote-dictation_user

where *password_for_remote-dictation_user* is the password you defined and noted for the remote-dictation user.

4. Copy the long string that is returned from this command.



Tip:

If it is too difficult to copy the string from the command-line interface, output the result to a text file, then copy the string from that file.

5. Open the Study.Status.Relay.exe.config file in a text editor.
6. Under StudyStatusRelayConfiguration, between the <UserPassword> and </UserPassword> tags, paste the long string.

For example:

```
...
<!--
The password to use when logging in as the UserId account. This
value is the BASE-64 encoded version of password that has been
encrypted using information specific to this machine.
Default: <none>
-->
<UserPassword>AQAAANCMnd8BFdERjHoAwE/Cl+sBAAAABbkeiV/jjUWSVOOgdR9
RYQQAAAACAAAAAADZgAAqAAAAABAAAACiWdpGofmXAMqUZ5YsA5lkAAAAASAAACg
AAAAEAAAAAMWx8NfIDRPiPIV+727lgQgQAAAA5wKiHz2sKwU4IlvifPm02BQAAAD5u
pFcxlJeslvaYnwvF5WMJo/6lQ==</UserPassword>
...
```

7. Update the values of **LoginServiceUrl**, **StudyInfoServiceUrl**, and **MessagingServiceUrl** with the local Application Server's fully qualified domain name.

8. Update the value of **RemoteSignalHost** with the host name or IP address of the computer in the previous-release version of IMPAX that is running the study-status-relay service.
9. Save and close the file.
10. In the command prompt, type

install_study_status_relay_service.bat

If a log4net error is returned, you can safely ignore this message.

To diagnose other errors or check status, consult the Study.Status.Relay.log file located in the study-status-signal-relay folder.

If ready to use the service, proceed to the next topic, *Running the Cross-Cluster Dictation Interlock tool* (refer to page 58).

7. Running the Cross-Cluster Dictation Interlock tool

(Topic number: 47379)

Before it can be run, the Cross-Cluster Dictation Interlock tool must be installed and configured.

The Cross-Cluster Dictation Interlock (CCDI) tool synchronizes both the dictation status and the claim status of studies between the previous version of IMPAX and IMPAX 6.5.3, when these are running in parallel—such as may happen when using a training server, when using a traveling server, or if planning to run the upgraded IMPAX cluster alongside the previous-version IMPAX cluster for a transition period.

Synchronization of the claim status of studies occurs only between versions of IMPAX that support shared workflows from which radiologists can then claim ownership of studies.



Note:

Do not confuse CCDI with Dual Cluster Claim and Assign (DCCA), which allows two active clusters of the same version (IMPAX 6.5.2 or later), running in parallel, to synchronize study status notifications and claim and assign messages between the two clusters as though they were one. For details, see “Understanding Dual Cluster Claim and Assign” (topic number 128193) in the *IMPAX 6.5.3 Application Server Knowledge Base*.

To run the Cross-Cluster Dictation Interlock tool



1. On the 6.5.3 Application Server where the Relay service is running, open a command prompt.
2. Type the following command:
net start StudyStatusRelayService
3. Exit the command prompt.

5. Validating the archives in the IMPAX 6.5.3 system

(Topic number: 125072)

Verify that the DAA consolidation was successful and that all archives are functioning properly in the new IMPAX 6.5.3 system.

To validate the archives in the IMPAX 6.5.3 system

1. Log into the IMPAX Administration Tools.
2. On the Daily tab, click **Job Manager**. 
3. Ensure that a PACS Archive queue exists.
4. Click **Study Manager**. 
5. Query the system and confirm that, as expected, studies in the old system with a DAA location (for example, T) now have a PACS location (P).
6. To validate retrieval from the archives, perform the following tests:
 - a. In the IMPAX 6.5.3 Administration Tools, open the Study Manager and select some studies marked as PACS archived (P). In the IMPAX Client, view the studies.
A study is retrieved from the PACS archive (the old DAA archive) only if it does not exist in any cache.
 - b. In the IMPAX 6.5.3 Client, display a study with a PACS location (P).
 - c. In the IMPAX 6.5.3 Administration Tools, open the Study Manager to archive a cached test or sample study to the HSM archive. Carefully delete the test or sample study from all caches. In the IMPAX Client, display the study.

6. Migrating image data

(Topic number: 125197)



Important!

This task applies to sites that have a DAA archive and need to migrate studies from it to the HSM archive of the new IMPAX 6.5.3 system. Or, to sites having to migrate studies from Network Gateway caches on an old IMPAX system to IMPAX 6.5.3.

Use the Volume Migration Tool (VMT) to migrate image data. For VMT software and documentation, refer to <http://ftp.agfa.be/HE/software/PACS/General/VMT/> (user name and password required) or contact Agfa Professional Services.

To migrate image data

1. Install and configure the VMT software on both IMPAX systems.
2. If applicable, migrate studies from the Network Gateway caches on the old IMPAX system to the new IMPAX 6.5.3 system.
3. If the old IMPAX system has a DAA archive, migrate the archived studies from the legacy archive to the new IMPAX 6.5.3 HSM archive.
4. Check the migration results.

7. Transitioning to the new IMPAX 6.5.3 system

(Topic number: 125240)

As archive migration can take a long time (months or years), users can transition to the new IMPAX 6.5.3 system as soon as a sufficient cache repository is available in the new system. The archive migration (from legacy DAA archive to the new HSM archive) continues in the background using VMT while new studies are stored directly on the HSM server.

To transition to the new IMPAX 6.5.3 system

1. Transmit all studies from the old IMPAX system acquired after the cold backup was taken to the new IMPAX 6.5.3 system.
2. Redirect all modalities to the new IMPAX 6.5.3 system.

8. Deleting the PACS Store and Remember archive locations

(Topic number: 123370)

After all studies have been migrated from DAA to HSM, the PACS Store and Remember archive locations can be deleted from the IMPAX 6.5.3 system.

To delete the PACS Store and Remember archive locations

1. Open a command prompt and change to the **C:\mvf\bin** directory.
2. To delete the archive locations, type

mvf_remove_archive.exe -a PACS_archive_AE_reference

Optionally include options **-l** for the log level and **-f** for the log file name.



Note:

De-referencing the archive location might take between 4 to 8 hours, depending on the system and the size of the archive being removed.

If the script fails with a Failed to remove archiver queue or similar error, rerun the script.

3. To update the entry in mvf_scu_service for the PACS Archive ae_ref to disable PACS Store and Remember archiving, type
update mvf_scu_service set pacs_archive_ae_ref = 0 where ae_ref = PACS_archive_AE_reference
4. If you are not using the PACS Store and Remember archive any longer, delete the associated caches by typing
bash mvf-remove-caches -a PACS_archive_AE_title
5. If planning to decommission the old IMPAX 5.3 or earlier system, remove its PACS Store and Remember archive reference by typing
mvf-remove-ae.exe -d mvf -U mvf -P mvf PACS_archive_AE_reference
Optionally include options -l and -f in the command.
6. Check the log file for any errors. If any appear, contact Agfa Professional Services.
7. Decommission and disconnect the old IMPAX cluster.

9. Uninstalling the IMPAX Migration Tools from a Windows computer

(Topic number: 47239)

Once all migration tasks and post-migration checks are completed, you must uninstall the IMPAX Migration Tools from all Windows-based computers on which they are installed. This is a legal requirement.

To uninstall the IMPAX Migration Tools from a Windows computer

1. Open Control Panel.
2. On Windows 2003 servers, select **Add or Remove Programs**.
On Windows 2008 servers, select **Programs and Features**.
3. Select **IMPAX 6.5.3 AS300 Migration 6.5.3.xxx**
where xxx is the build number.
4. On Windows 2003 servers, click **Change/Remove**. On Windows 2008 servers, click **Uninstall**.
5. In the Confirm File Deletion dialog, click **Yes**.
6. At the Uninstall complete prompt, click **Finish**.

10. Uninstalling the Cross-Cluster Dictation Interlock tool

(Topic number: 60390)

If you no longer have to synchronize the dictation status of studies between the 5.3 or earlier and the 6.5.3 IMPAX systems, you can uninstall the components of the Cross-Cluster Dictation Interlock tool.

To uninstall the Cross-Cluster Dictation Interlock tool

1. On the computer where the 5.3 or earlier Cross-Cluster Dictation Interlock components were copied, open the Windows Administrative Tools and select **Services**.
2. Right-click the **MVF Signal Relay** service and select **Stop**.
3. Close the Services window by selecting **File > Exit**.
4. Open a command prompt.
5. Change to the **C:\mvf\bin** directory.
6. Type
mvf_signal_relay.exe -remove
7. Type **clui**.
8. In CLUI, type
delete from map_ini where ini_section='signal-relay'
9. To exit CLUI, type **exit**.
10. In Windows Explorer, navigate to **C:\mvf\bin** and delete the **mvf_signal_relay.exe** and the **install_relay-signal.bat** files.
11. Optionally, you can delete the **signal-relay** and **sig-relay-train** users from the IMPAX 5.3 or earlier Service Tools User Manager.
12. On the IMPAX 6.5.3 Application Server where the 6.5.3 Cross-Cluster Dictation Interlock components were copied, open the Windows Administrative Tools and select **Services**.
13. Right-click the **Impax Study Status Relay** service and select **Stop**.
14. Close the Services window by selecting **File > Exit**.
15. Open a command prompt.
16. Change to the directory containing the Cross-Cluster Dictation Interlock components—possibly **C:\Program Files\Agfa\Impax Business Services**.
17. Type
uninstall_study_status_relay_service.bat.
18. To close the command prompt, type **exit**.

19. From Windows Explorer, navigate to and delete the **study-status-signal-relay** folder (possibly from C:\Program Files\Agfa\Impax Business Service).
20. Log into an IMPAX 6.5.3 Client as an administrator user.
21. From the Configure area > Users and Roles section, delete the **remote-dictation** user from the Study Status Relay role, then delete the **Study Status Relay** role.

All components of the Cross-Cluster Dictation Interlock tool are now removed.

IMPAX hardware and software requirements

A

For optimal performance, Agfa recommends particular hardware and software for each component of the cluster.

IMPAX Application Server hardware and software requirements

(Topic number: 6682)

Application Servers have specific hardware and software requirements. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX Application Server: Hardware requirements

(Topic number: 6691)

The following hardware configuration is recommended for Application Servers.

Component	Requirements
System	Preferred: HP ML370 G6/G7, DL380 G6/G7 Supported: Dell 1900, 2900, 2950, 6900*, 6950*, PER610/710, PET610/710
CPU	Minimum: 1 x dual core
RAM	8 GB minimum
Hard drive space	2 x 73 GB (Mirrored)

Component	Requirements
RAID	Embedded
Tape backup	DAT 72/160 tape drives (if required for backup). For Oracle and larger SQL installs, a network backup is preferred.
Modem	N/A
DVD-ROM	Yes
Network interfaces	100/1000 Mbps
Video	KVM or Integrated video
Power supplied	Redundant
Peripherals	KVM or mouse and keyboard

* The use of four-CPU socket servers for IMPAX is supported but not recommended.

IMPAX Application Server: Software requirements

(Topic number: 6621)

The following tables list the required software for Application Servers using Windows Server 2008® R2 (64 bit only) platforms. Unless otherwise indicated, Agfa does not provide the software as part of the Application Server installation package.



Note:

The Office Converter Pack files are installed as part of the Application Server installation. They are installed only when the RIS Services are installed.

Component	Requirements
Operating system	Windows Server 2008® R2 Service Pack 1, (64-bit), US - English
Remote access	Symantec pcAnywhere™ version 12.5 SP3 with HF TECH179960
Other explicit software	<ul style="list-style-type: none"> • IIS 7.5 for Windows 2008 R2 • Microsoft Internet Explorer 8.0 • AD LDS • .NET 3.5 SP1 • Latest version of Adobe® Reader® • Norton Antivirus 6.1 or higher, Trend Micro, McAfee Antivirus 4.5 or higher

IMPAX AS300 Server hardware and software requirements

(Topic number: 6674)

IMPAX AS300 Servers (including single-server configurations and dedicated Curator and CD Export servers) have specific hardware and software requirements. Where a specific manufacturer is identified, only that manufacturer's device is supported.

IMPAX AS300 Server: Hardware requirements

(Topic number: 6690)

The following hardware configuration is recommended for IMPAX AS300 servers (including single-server configurations).

Component	Requirements
Example systems	Preferred: HP ML370, DL380 (may be deployed with VMware ESXi 4.1.0) Supported: Dell 1900, 2900, 2950, 6900*, 6950*
Number of CPUs	Minimum one dual-core, x64 capable CPU
RAM	8 GB minimum (Oracle 11g requires more RAM than previous versions of Oracle) 16 GB minimum for Oracle Data Guard servers
Hard drive	Minimum three drives Minimum drive size 73 GB; NAS/SAN connections also supported See "Recommended disk partitions" (topic number 7056) in the <i>IMPAX 6.5.3 AS300 Installation and Configuration Guide</i> .
RAID	Embedded RAID (for onboard storage)
Tape backup	DAT 72/160 tape drives, if required for SQL database backup. Oracle direct tape backup is not supported. For Oracle and larger SQL installs, network backup is preferred. The third-party backup tool, HP Data Protector, can be used and is free when ordering an HP tape device.
Modem	Not required
DVD-ROM	Yes

Component	Requirements
Floppy	No
Network interfaces	100/1000 Mbps
Video	Integrated video
Power supplies	Redundant
Peripherals	Mouse, keyboard, monitor

* The use of four-CPU servers for IMPAX is supported but not recommended.

Additional AS300 hardware requirements: Storage requirements

(Topic number: 6733)

Additional hardware can be used to meet archive requirements.

IMPAX AS300 Server: Non-SCSI CD/DVD burners and controller cards

(Topic number: 58044)

OEM-supplied CD/DVD writer

IMPAX AS300 Server: HSM storage requirements

(Topic number: 6686)

Direct attached libraries are not supported in IMPAX 6.5.3.

The following HSM storage devices are preferred:

- EMC
- HP
- QStar



Note:

To use QStar HSM with IMPAX, open port 160 for UDP messages.

IMPAX AS300 Server: External storage requirements

(Topic number: 6616)

For the most current and complete listing of supported storage products, refer to the [IIBU Solution Platform Compatibility Matrix](#) (Livelihood ID 19535804). If you do not have access to this document, contact Agfa Professional Services.

IMPAX AS300 Server: External software requirements

(Topic number: 6695)

The following software is required for most IMPAX AS300 servers. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX AS300 Server installation package.

Component	Requirements
Operating system	Windows Server 2008 R2 SP1 (64-bit)
Database software	One of the following: <ul style="list-style-type: none">Enterprise Edition, Standard Edition, or Standard Edition One of Oracle 11.2.0.2 (April 2011 CPU), provided on Oracle for Windows 64-bit DVD. For Oracle Data Guard, Enterprise Edition is required. A valid support contract is required.orUpgrades only: Microsoft SQL Server 2008 R2 SP1 (64-bit), Standard Edition.
Database software (for separate Network Gateway, Archive Server)	Oracle Instant Client 11.2.0.1.0 including Basic, ODBC, and SQLPlus ODAC 11.2.0.2.1 for .NET 2.0
Browser	Internet Explorer 8.0
Java	Version 1.6 u31
Documentation	Latest version of Adobe® Reader®
Remote access (optional)	Symantec pcAnywhere version 12.5 SP3 with TECH179960 hotfix
Antivirus	Norton Antivirus 6.1 or higher, Trend Micro, McAfee Antivirus 4.5 or higher Refer to Agfa's <i>Policy on Use of Anti-Virus Software</i>
Other software	.NET Framework 3.5 SP1

IMPAX Client hardware and software requirements

(Topic number: 6679)

IMPAX Client workstations have specific hardware and software requirements.

IMPAX Client: Hardware requirements

(Topic number: 7793)

The following hardware configuration are intended as a guide for IMPAX 6.5.3 Clients used primarily for viewing large volume image sets (such as 64 slice CT) and using third-party applications such as Voxar 3D, TalkStation, Orthopaedic planning tools, and so on. These Clients are typically used inside a hospital environment, such as a radiology reading area by radiologists. While IMPAX Client should work on an equivalent platform, optimal results can be guaranteed only on the recommended platform.

To use the CT-MR navigation tools, we strongly recommend that, due to the high volume of data being manipulated, Client systems be equipped with a high-end video subsystem that is PCIe X16 based.



CAUTION!

For official diagnostic interpretation, we recommend setting the display to 32-bit color or more.

Component	Requirements
System	The Agfa preferred supplier is HP. HP xw4400, xw4600, xw6400, xw6600, z400, or z600 Dell Precision™ 490 or 690, T5400, T7400, or T7500
CPU	2 x 2.0GHz or higher 1 x Dual/Quad Core 2.8GHz or higher 1 x Intel® Pentium® M 1.5GHz (Tablet PC – Non-diagnostic)
RAM	Windows XP: 1 GB minimum Windows Vista and Windows 7: 4 GB minimum 8 GB recommended for all new systems for optimal performance and viewing of large volume image sets 4 GB recommended for IMPAX Clinical Applications such as IMPAX Virtual Colonoscopy, IMPAX PET-CT Viewing, and IMPAX Reporting (embedded speech recognition)
Hard drive space	80 GB minimum
Modem	Not applicable
DVD-ROM drive	Yes
Tape backup	Not applicable
Floppy drive	Not applicable
Network interfaces	System comes with an integrated 100/1000 Mbps Ethernet adapter
Power supply	Default

Component	Requirements	
Peripherals	Scroll mouse and keyboard For North America, the Logitech MX518 is used with the MA3000.	
Other	Microsoft supported DVD RW/CDRW	
Video		
Diagnostic review workstations and high-end diagnostic review workstations	Windows 7 (WDDM)*: MXRT1150, 2150 MXRT5200 (covers 98% of the diagnostic requirements) MXRT5400 MXRT7200 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX) MXRT7300 (high end board for IMPAX Clinical Applications such as Oasis for IMPAX. Supported from WDDM v1.1 May/June 2010)	Windows XP and Vista (for upgrades): BarcoMed PCIe for Coronis BarcoMed PCIe for Nio BarcoMed PCIe 5MP2FH (only with monitor MF GD-5621HD) MXRT 2100/5100/7100 (not sold anymore but still supported) MXRT5200 (covers 98% of the diagnostic requirements) MXRT200 and 7300 (high-end board for IMPAX Clinical Applications such as Oasis for IMPAX)
RIS/Administrator stations and Clinical review stations	Windows 7 (WDDM): NVIDIA FX 1700, FX 1800, FX 4800 ATI 3700, 3750, V3800 (third monitor board) MXRT 1150/2150 (third monitor board)	Windows XP and Vista: NVIDIA FX 1700, FX 1800, FX 4800 ATI 3700, 3750, V3800 (third monitor board) MXRT 1150/2150 (third monitor board)

*Windows 7 and WDDM drivers do not support the BarcoMed and older MXRT (2100, 5100, and 7100) boards.

IMPAX Client: External software requirements

(Topic number: 6694)

The following software is required for all new stations. Unless otherwise indicated, Agfa does not provide the software as part of the IMPAX Client installation package.



Note:

Ensure that the WEB, Compressor, and Curator packages are not installed on the Client machine.

Component	Requirements
Operating system	<p>Windows 7 Professional 64-bit (single language support) SP1 or Windows 7 Ultimate 64-bit (multi-language support) SP1 for Diagnostic review stations</p> <p>Microsoft Windows XP Professional SP3 may be used for non-diagnostic Client upgrades but is no longer available for shipment</p> <p>Note that other versions of Windows 7 SP1 can be used for non-diagnostic review stations.</p>
Other software	<p>Microsoft Internet Explorer 8.0</p> <p>.NET 3.5 SP1</p> <p>Latest version of Adobe® Reader®</p> <p>Antivirus software such as Norton Antivirus 6.1 or higher, Trend Micro, or McAfee Antivirus 4.5 or higher</p> <p>Note that Oracle 11 Client is required for IMPAX Reporting and IMPAX for Cardiology</p>

The IMPAX Client will run on 64-bit operating systems in 32-bit compatibility mode. The IMPAX Client is not a 64-bit application and therefore does not take advantage of 64-bit processing or memory addressing.

Migration tool references

B

More information about some of the tools used in the upgrade process are available in reference topics.

IMPAX AS300 installation programs

(Topic number: 7684)

IMPAX 6.5.3 AS300 includes two installation programs for Windows Server 2008 R2 servers.

Program	Purpose
setup.bat (Oracle for 64-bit Windows DVD)	Install the appropriate version of Oracle Server for Windows Server 2008 R2
as300-installer.exe (IMPAX AS300 installation DVD)	Install or upgrade an AS300 Database Server on Windows Server 2008 R2, under Oracle or SQL Server Install or upgrade an AS300 single-host server Install or upgrade an AS300 Network Gateway, Archive Server, Curator, or Cached Workstation



Note:

SQL Server 2008 R2 is not distributed with IMPAX but is available from the Agfa Parts Center.

AS300 installer packages reference

(Topic number: 7682)

The standard IMPAX AS300 installer groups the packages to install under four sections: default, database, archive, and optional. The following tables explain each package.

Default

Depending on the configuration of IMPAX being implemented, certain packages may not be supported.

Default packages	Purpose
MVFCore	Installs the DICOM services for IMPAX and contains several core Windows services and database tables used by IMPAX.
MVFCache	Installs the DICOM SCU and autopilot services used by IMPAX and spftp services. MVFCache includes mvf_compressor, used for lossy compression, and cache_migration, used to migrate cache volumes from a flat to a hierarchical structure.
MVFNetworkGateway	Installs the SCP and APIP-SCP services used by IMPAX. Install this package only on stations that require Network Gateway functionality. Servers that support only internal transfers, not incoming DICOM communications, do not require it.
AdministrationTools	Installs the Java Administration Tools application for configuring and managing IMPAX. It also copies the Java Runtime Environment (JRE) self-extracting executable onto the system. The package can be installed on more than one server, but run only one instance at a time (by disabling the other Administration Tools services).
MVFOcr	Installs the files necessary to enable Optical Character Recognition. This is an optional installation that works in conjunction with the MVFNetworkGateway package. Install it only if your system requires OCR. The OCR package installs default OCR templates to handle many different modality vendors. OCR training tools are not included with IMPAX.
VaultAgfa	Includes specific requirements and database extensions.

Database

Only one of the two Database Packages can be installed. Install these only on single-host servers or dedicated Database Servers.

Database packages	Purpose
Oracle Server Extension	Contains the files necessary to build an Oracle Server database to be used by IMPAX.
SQL Server Extension	Contains the files necessary to build a SQL Server 2008 R2 database to be used by IMPAX. For upgrades only.

Archive

Depending on the configuration of IMPAX being implemented, an archive package may not be supported.

Archive packages	Purpose
MVFhsm	Installs the HSM package.


Archiving considerations:

- If the server is used for viewing only (no archiving), do not install any archive package. Do not install archive packages on standalone stations.
- PACS Store and Remember archiving is available but does not require an installation package. It does require an archive license.

Optional

Depending on the configuration of IMPAX being implemented, certain packages may not be supported.

Optional packages	Purpose
MVFCompressor	Installs the MVF Compressor package, which includes mvf_compressor_scheduler. The mvf_compressor_scheduler process is responsible for scheduling the lossy compression of images.
MVFScavenger	Do not install. Previously used for direct attached archives, which are no longer supported.
MVFCurator	Installs the Curator package. The Curator process compresses incoming images into Mitra wavelet format and stores them in the web cache. Studies compressed by the Curator process are served locally or over a network to display clients.
MVFclexport	<p>Installs the CD Export server, used with the CD Export feature in the IMPAX Client. The CD Export server processes local burn jobs created by the IMPAX Client and prepares the zip files containing the data for the burn job.</p> <p>For instructions on using CD Export, see “Exporting and viewing images from CD or DVD” (topic number 8209) in the <i>IMPAX 6.5.3 Client Knowledge Base: Extended</i>.</p>

Optional packages	Purpose
MVFchangeaccepter	Installs a package related to the processing of change context (cc) objects. This feature is not required and we recommend that this package not be installed.
MVFpap	<p>Installs the PAP package. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) by receiving studies and allows sites to have their studies mirrored at another site through PACS Store and Remember archiving. This mirroring protects against data loss and enables studies at one PACS to be viewed at another.</p> <p>For instructions on configuring a PAP, see “Configuring a PACS Archive Provider (PAP)” (topic number 11586) in the <i>IMPAX 6.5.3 Server Knowledge Base</i>.</p>
MVForadg	<p>Installs a set of scripts and tools for configuring and monitoring Oracle Data Guard.</p> <hr/> <div>  Important! </div> <p>Data Guard works only on servers running Oracle Enterprise Edition. Do not install it on a Database Server using SQL Server or Oracle Standard Edition, and do not include it on other types of servers (Archive Server, Network Gateway, Curator, standalone).</p> <hr/>

PMTS scripts reference

(Topic number: 125234)

The following table provides an overview of the PMTS scripts. These tools are available from Agfa. They are not distributed with the IMPAX software.

PMTS tool	Function
migrate-mi-server-database and migrate-it-ws-database	Upgrades the database schema from IMPAX 4.5 to 5.2.
mvf-remove-caches (bash script)	Removes image cache and cached locations from the database.
mvf-remove-web-caches (bash script)	Removes web cache and cached locations from the database.
mvf_remove_archive	Removes archive and archive locations from the IMPAX 6.2 and later database.
mvf_remove_archive_pre6	Removes archive and archive locations from the IMPAX 5.3 and earlier database.

PMTS tool	Function
mvf-offline-vols (bash script)	Sets DAA library volumes as OFFLINE.
convert_to_remote_archive	Converts DAA entries to PACS Store and Remember entries.

Common parameters in Migration Tool commands

(Topic number: 6720)

These command-line parameters are common to most of the executables in the IMPAX 6.5.3 Migration Toolbox.

Parameters	Values	Additional information
-d	<i>database_name</i>	DNS name for ODBC connection. Required for the migration_inventory.exe (refer to page 78) and migration_inventory tool.
-e	<i>entity_name</i>	
-f	<i>log_file</i>	Log file name. Differs somewhat for migrate-users.exe.
-l	{ debug info error audit service noservice }	Logging level. Differs for database-upgrade-script.bat (refer to page 77) and database-upgrade-script.
-p	<i>process_title</i>	Differs for mig_reporter.exe (refer to page 78) and mig-reporter.
-P	<i>database_password</i>	
-R	<i>database_reconnection_attempts</i>	
-s	None	Output to stdout. Differs for migration_inventory.exe (refer to page 78) and migration_inventory.
-U	<i>database_user</i>	
-?	None	Usage/help screen

build-impax-mig-schema.bat

(Topic number: 10611)

Installs Migration Tools database schema and data which the Migration Tools use during the preparing to upgrade phase.

SQL Server databases

For a SQL Server database, on a computer supporting user ID *sa*, password *sa*, and ODBC name *mvf*, the batch file can be run directly. Otherwise, you must specify the mvf user, mvf password, ODBC name, in that order.

Examples:

```
build-impax-mig-schema.bat sa pwd new
```

Runs the command for user *sa*, password *pwd*, and ODBC name *new*.

```
build-impax-mig-schema.bat
```

Runs the command for user *sa*, password *sa*, and ODBC name *mvf*. These default values do not have to be specifically included; however, if problems occur in running this script, specifying these values may solve the problem.

Oracle databases

For an Oracle database, run the script with no additional parameters.

```
build-impax-mig-schema.bat
```

database-upgrade-script.bat

(Topic number: 10613)

Upgrades the IMPAX 5.2 or later SQL Server database schema to IMPAX 6.5.3. This is a batch file that the user runs, which calls the executable file that handles the main part of the database upgrade.

The database-upgrade-script requires a report source. Reports are retrieved from IMPAX clusters based on matches between the report source and the value of the dosr_study table's requesting_service field, which is set by the Connectivity Manager's requesting_service field during HIS verification. Check the Connectivity Manager for the value of the requesting_service field. This field is case-sensitive.

To check the value of the Connectivity Manager's requesting_service field

1. On the Connectivity Manager, open osql and type
use mcf;
select distinct requesting_service from mcf_service_request;



Note:

If this Connectivity Manager receives data from multiple report sources, several requesting_service values may match each report source. If multiple values are returned, consult a Connectivity Manager integrator, as data and mappings may need to be updated.

Parameters	Values	Default value
-l	<i>dump_file_location_for_MAP_EVENT_and_MAP_EVENT_AUDIT</i>	C:\mvf-mig6\data
-x	<i>path_to_IMPAX_installation_directory</i>	C:\mvf

Parameters	Values	Default value
-a	None; runs the command in audit mode, which means that it tests the upgrade script without actually upgrading the database. No longer recommended for use.	Not applicable
-v	{52 53 62 63 64 65}; refers to the version being upgraded from. If upgrading from IMPAX 6.5.x, the version parameter can be omitted.	Not applicable

Examples:

```
database-upgrade-script.bat -v 62
```

Migrate the database from IMPAX 6.2 to IMPAX 6.5.3.

mig_reporter.exe

(Topic number: 10619)

Generates a progress report of long-running tasks as well as the final report output from each tool to a file or directly to the screen. This is an optional helper utility.

Parameters	Values	Default value
-h	<i>host_name</i>	None
-t	<i>Migration_Tool_name</i>	None
-r	<i>information_type</i>	None
-p	None; deletes prior entries	Not applicable
-v	None; verbose mode	Not applicable
-c	None; output to screen instead of to reports directory	Not applicable

Example:

```
mig_reporter.exe -d mvf_52 -t system_inventory_tool
```

This command writes the output of the system inventory command to a report file.

migration_inventory.exe

(Topic number: 10623)

Collects key IMPAX Server and Client information stored in database; for example, number of studies, number of objects, number of sources, and so on. Generally used only for upgrades from IMPAX 5.2 or 5.3.

Parameters	Values	Default value
-a	None; generates all reports	Not applicable

Parameters	Values	Default value
-s	None; generates system snapshot	Not applicable
-c	None; generates cluster summary for client and server machines	Not applicable

Example:

```
migration_inventory.exe -d mvf_52 -U sa -P -sa -c -D 52_server
```

Produces a full cluster summary of client and server machines connected to the specified database.

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Cygwin

(Topic number: 121758)

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Oracle® Database

(Topic number: 148001)

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Xerces C++ Parser, version 1.2

(Topic number: 121761)

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Zlib

(Topic number: 7595)

zlib.h -- interface of the 'zlib' general purpose compression library version 1.2.2, October 3rd, 2004
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Mark Adler madler@alumni.caltech.edu

Glossary

A

all-in-one configuration

A configuration in which the Database, Archive Server, Network Gateway, and Curator Server components are all installed on a single Windows server, along with the Application Server software.

APIP

Agfa Proprietary Imaging Protocol. Used to receive the proprietary format, reformat the images to DICOM, and redirect them to the SCP. An APIP SCP is used specifically to receive images from certain older Agfa image sources.

Autopilot

Service that removes old and expired data when the cache starts to get full. This maintenance function keeps the database to a manageable size.

C

cc objects

Change Context (cc) objects are DICOM objects used to communicate and synchronize study metadata changes across multiple IMPAX clusters.

compression

Reduces the size of a file to save both file space and transmission time. Lossless, lossy, and wavelet are examples of compression types.

Connectivity Manager

A middleware component in the integration between hospital information systems and other hospital imaging departments. Connectivity Manager also provides connectivity to each modality and the PACS.

Curator

Curator is an IMPAX MVF server component. It is responsible for compressing incoming images into the Mitra Wavelet format and storing them in the web cache. These studies can be accessed by remote or local clients.

D

database

A collection of data that is organized so that its contents can easily be accessed, managed, and updated.

Database Server

Server that hosts the Oracle or SQL database.

DICOM

Digital Imaging and Communications in Medicine. The standard communication protocol used by a PACS, HIS, or modality to exchange information or images with other systems.

DNS

Domain Name System. A general-purpose distributed, replicated, data query service

mainly used on the Internet for translating host names into Internet addresses. Also refers to the style of host name used on the Internet, though such a name is properly called a *fully qualified domain name*.

H

HSM

Hierarchical Storage Management. An HSM archive system provides long-term storage of data and access to data. Studies archived with HSM are stored to a file system. A mount point and subdirectory to store studies is specified. The HSM system handles data storage.

I

image

A single frame taken by a modality. Certain modalities, such as a CT, MRI, or PET, take consecutive sets of images called *series*. *Studies* are combinations of series or images for a single patient.

IP address

The Internet Protocol address is a numeric address that identifies the station to other TCP/IP devices on the network.

M

MAC address

Media Access Control address. The unique physical address of each device's network interface card.

modality

An imaging discipline, such as CT, or a device that gathers digital information, such as digitizers for X-ray film, MRI scanners, and CR devices.

multiple IMPAX cluster configuration

In a multiple IMPAX cluster configuration, an IMPAX cluster is linked to one or more other IMPAX or external PACS clusters, such that patient and study data can be shared and synchronized between them.

N

network

A group of computers, peripherals, or other equipment connected to one another for the purpose of passing information and sharing resources. Networks can be local or remote.

Network Gateway

The Network Gateway is part of the IMPAX MVF cluster. Essentially, this is the workflow manager of the IMPAX 6.0 and later system. The Network Gateway controls the studies coming into the cluster from an acquisition station, validates these incoming studies against information from the HIS or RIS, and routes the validated studies to cache or archive.

O

OCR

Optical Character Recognition is the recognition of printed or written characters by a computer. If a modality generates images into the system but not enough information about a study is sent, OCR templates read information directly from the burned demographics.

P

PACS

A Picture Archive and Communication Systems (PACS) makes it possible to electronically store, manage, distribute, and view images.

PAP

PACS Archive Provider. A PACS Archive Provider (PAP) acts like a Service Class Provider (SCP) in that it receives studies. However, it differs from an SCP in that the PAP can automatically register a study as PACS archived if the study originates from a source that the PACS stores to and remembers from, without having to queue the study for archiving back to the source. The PAP can also parse the private tags of the incoming DICOM objects to determine HIS verification and study status.

prefetching

The automatic retrieval of relevant priors based on a study scheduled event (studies in the RIS that are scheduled to be performed).

protocol

Language in which two systems communicate. For example, DICOM, HL7, and SQL are all protocols.

R

relevant prior

An exam that was conducted for a patient before the current exam, and that has one or more characteristics that make it of interest or importance to the current exam.

RIS

Radiology Information System. Responsible for scheduling exams and for report management in the Radiology department.

S

SCP

Service Class Provider. A DICOM server that receives requests from an SCU. The DICOM SCP accepts images for processing, processes

find and retrieve requests, and handles storage commitment requests and replies.

SCU

Service Class User. Primarily sends DICOM requests to an SCP.

single-host configuration

A configuration in which the Database, Archive Server, and Network Gateway server components are all installed on a single server.

single-server configuration

An IMPAX single server is a Windows server that runs the AS300 Server software in a single-host configuration along with the Application Server and Connectivity Manager software.

standalone configuration

In an IMPAX standalone configuration, the IMPAX AS300 Server, Application Server, and Client software are all installed on the same Windows server.

T

TalkStation

TalkStation is voice recognition software that can be integrated with IMPAX. TalkStation can convert spoken speech to typed text without having to go through a transcription phase.

Text area

Component of the IMPAX Client that displays study, order, and report information.

W

wavelet compression

Compression method using a proprietary compression algorithm that can be

uncompressed only by systems that support that proprietary algorithm.

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